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A Short History of Price Support and Adjustment Legislation and Programs for Agriculture, 1933-65

By Wayne D. Rasmussen and Gladys L. Baker

MANY PROGRAMS of the U.S. Department of Agriculture, particularly those concerned with supporting the prices of farm products and encouraging farmers to adjust production to demand, are the result of a series of interrelated laws passed by the Congress from 1933 to 1965. This review attempts to provide an overall view of this legislation and programs, showing how Congress has modified the legislation to meet changing economic situations, and giving a historical background on program development. It should serve as background for economists and others concerned with analyzing present farm programs.

The unprecedented economic crisis which paralyzed the Nation by 1933 struck first and hardest at the farm sector of the economy. Realized net income of farm operators in 1932 was less than one-third of what it had been in 1929. Farm prices fell more than 50 percent, while prices of goods and services farmers had to buy declined 32 percent. The relative decline in the farmers' position had begun in the summer of 1920. Thus, farmers were caught in a serious squeeze between the prices they received and the prices they had to pay.

Farm journals and farm organizations had, since the 1920's, been advising farmers to control production on a voluntary basis. Attempts were made in some areas to organize crop withholding movements on the theory that speculative manipulation was the cause of price declines. When these attempts proved unsuccessful, farmers turned to the more formal organization of cooperative marketing associations as a remedy. The Agricultural Marketing Act of 1929, establishing the Federal Farm Board, had been enacted on the theory that cooperative marketing organizations aided by the Federal Government could provide a solution to the problem of low farm prices. To supplement this method the Board was also given authority to make loans to stabilization corporations for the purpose of controlling any surplus through purchase operations. By June 30, 1932, the Federal Farm Board stated that its efforts to stem the disastrous decline in farm prices had failed. In a special report to Congress in December 1932, the Board recommended legislation which would "provide an effective system for regulating acreage or quantities sold, or both." The Board's recommendation on control of acreage or marketing was a step toward the development of a production control program.

Following the election of President Franklin D. Roosevelt, who had committed himself to direct Government action to solve the farm crisis, control of agricultural production became the primary tool for raising the prices and incomes of farm people.

The Agricultural Adjustment Act of 1933

The Agricultural Adjustment Act was approved on May 12, 1933. Its goal of restoring farm purchasing power of agricultural commodities to the prewar 1909-14 level was to be accomplished through the use, by the Secretary of Agriculture, of a number of methods. These included the authorization (1) to secure voluntary reduction of the acreage in basic crops through agreements with producers and use of direct payments for participation in acreage control programs; (2) to regulate marketing through voluntary agreements with processors, associations of producers, and other handlers of agricultural commodities or products; (3) to license processors, associations of producers, and others handling agricultural commodities to eliminate unfair practices or charges; (4) to

determine the necessity for and the rate of processing taxes; and (5) to use the proceeds of taxes and appropriate funds for the cost of adjustment operations, for the expansion of markets, and for the removal of agricultural surpluses. Congress declared its intent, at the same time, to protect the consumers' interest. Wheat, cotton, field corn, hogs, rice, tobacco, and milk and its products were designated as basic commodities in the original legislation. Subsequent amendments in 1934 and 1935 expanded the list of basic commodities to include the following: rye, flax, barley, grain sorghums, cattle, peanuts, sugar beets, sugarcane, and potatoes. However, acreage allotment programs were only in operation for cotton, field corn, peanuts, rice, sugar, tobacco, and wheat.

The acreage reduction programs, with their goal of raising farm prices toward parity (the relationship between farm prices and costs which prevailed in 1909–14), could not become effective until the 1933 crops were ready for market. As an emergency measure during 1933, programs for plowing under portions of planted cotton and tobacco were undertaken. The serious financial condition of cotton and corn-hog producers led to demands in the fall of 1933 for price fixing at or near parity levels. The Government responded with nonrecourse loans for cotton and corn. The loans were initiated as temporary measures to give farmers in advance some of the benefits to be derived from controlled production and to stimulate farm purchasing power as a part of the overall recovery program. The level of the first cotton loan, in 1933, at 10 cents a pound, was at approximately 69 percent of parity. The level of the first corn loan, at 45 cents per bushel, was at approximately 60 percent of parity. The loans were made possible by the establishment of the Commodity Credit Corporation on October 17, 1933, by Executive Order 6340. The funds were secured from an allocation authorized by the National Industrial Recovery Act and the Fourth Deficiency Appropriation Act.

The Bankhead Cotton Control Act of April 21, 1934, and the Kerr Tobacco Control Act of June 28, 1934, introduced a system of marketing quotas by allotting to producers quotas of tax-exemption certificates and tax-payment warrants which could be used to pay sales taxes imposed by these acts. This was equivalent to allotting producers the quantities they could market without being taxed. These laws were designed to prevent growers who did not participate in the acreage reduction program from sharing in its financial benefits. These measures introduced the mandatory use of referendums by requiring that two-thirds of the producers of cotton, or growers controlling three-fourths of the acreage of tobacco, had to vote for a continuation of each program if it was to be in effect after the first year of operation.

Surplus disposal programs of the Department of Agriculture were initiated as an emergency supplement to the crop control programs. The Federal Surplus Relief Corporation, later named the Federal Surplus Commodities Corporation, was established on October 4, 1933, as an operating agency for carrying out cooperative food purchase and distribution projects of the Department and the Federal Emergency Relief Administration. Processing tax funds were used to process heavy pigs and sows slaughtered during the emergency purchase program, which was part of the corn-hog reduction campaign begun during November 1933. The pork products were distributed to unemployed families. During 1934 and early 1935, meat from animals purchased with special drought funds was also turned over for relief distribution. Other food products purchased for surplus removal and distribution in relief channels included butter, cheese, and flour. Section 32 of the amendments of August 24, 1935, to the Agricultural Adjustment Act set aside 30 percent of the customs receipts for the removal of surplus farm products.

Production control programs were supplemented by marketing agreement programs for a number of fruits and vegetables and for some other nonbasic commodities. The first such agreement, covering the handling of fluid milk in the Chicago market, became effective August 1, 1933. Marketing agreements raised producer prices by controlling the timing and the volume of the commodity marketed. Marketing agreements were in effect for a number of fluid milk areas. They were also in operation for a short period for the basic commodities of tobacco and rice, and for peanuts before their designation as a basic commodity.

On August 24, 1935, amendments to the Agricultural Adjustment Act authorized the substitution of orders issued by the Secretary of

Agriculture, with or without marketing agreements, for agreements and licenses.

The agricultural adjustment program was brought to an abrupt halt on January 6, 1936, by the Hoosac Mills decision of the Supreme Court, which invalidated the production control provisions of the Agricultural Adjustment Act of May 12, 1933.

Farmers had enjoyed a striking increase in farm income during the period the Agricultural Adjustment Act had been in effect. Farm income in 1935 was more than 50 percent higher than farm income during 1932, due in part to the farm programs. Rental and benefit payments contributed about 25 percent of the amount by which the average cash farm income in 1933-35 exceeded the average cash farm income in 1932.

The Soil Conservation and Domestic Allotment Act of 1936

The Supreme Court's ruling against the production control provisions of the Agricultural Adjustment Act presented the Congress and the Department with the problem of finding a new approach before the spring planting season. Department officials and spokesmen for farmers recommended to Congress that farmers be paid for voluntarily shifting acreage from soil-depleting surplus crops into soil-conserving legumes and grasses. The Soil Conservation and Domestic Allotment Act was approved on February 29, 1936. This Act combined the objective of promoting soil conservation and profitable use of agricultural resources with that of reestablishing and maintaining farm income at fair levels. The goal of income parity, as distinguished from price parity, was introduced into legislation for the first time. It was defined as the ratio of purchasing power of the net income per person on farms to that of the income per person not on farms which prevailed during August 1909-July 1914.

President Roosevelt stated as a third major objective "the protection of consumers by assuring adequate supplies of food and fibre." Under a program launched on March 20, 1936, farmers were offered soil-conserving payments for shifting acreage from soil-depleting crops to soil-conserving crops. Soil-building payments for seeding soil-building crops on cropland and for carrying out approved soil-building practices on cropland or pasture were also offered.

Curtailment in crop production due to a severe drought in 1936 tended to obscure the fact that planted acreage of the crops which had been classified as basic increased despite the soil conservation program. The recurrence of normal weather, crop surpluses, and declining farm prices in 1937 focused attention on the failure of the conservation program to bring about crop reduction as a byproduct of better land utilization.

Agricultural Adjustment Act of 1938

Department officials and spokesmen for farm organizations began working on plans for new legislation to supplement the Soil Conservation and Domestic Allotment Act. The Agricultural Adjustment Act of 1938, approved February 6, 1938, combined the conservation program of the 1936 legislation with new features designed to meet drought emergencies as well as price and income crises resulting from surplus production. Marketing control was substituted for direct production control, and authority was based on Congressional power to regulate interstate and foreign commerce. The new features of the legislation included mandatory nonrecourse loans for cooperating producers of corn, wheat, and cotton under certain supply and price conditions--if marketing quotas had not been rejected--and loans at the option of the Secretary of Agriculture for producers of other commodities; marketing quotas to be proclaimed for corn, cotton, rice, tobacco, and wheat when supplies reached certain levels; referendums to determine whether the marketing quotas proclaimed by the Secretary should be put into effect; crop insurance for wheat; and parity payments, if funds were appropriated, to producers of corn, cotton, rice, tobacco, and wheat in amounts which would provide a return as nearly equal to parity as the available funds would permit. These payments were to supplement and not replace other payments. In addition to payments authorized under the continued Soil Conservation and Domestic Allotment Act for farmers in all areas, special payments were made in 10 States to farmers who cooperated in a program to retire land unsuited to cultivation as part of a restoration land program initiated

in 1938. The attainment, insofar as practicable, of parity prices and parity income was stated as a goal of the legislation. Another goal was the protection of consumers by the maintenance of adequate reserves of food and fiber. Systematic storage of supplies made possible by nonrecourse loans was the basis for the Department's Ever-Normal Granary plan.

Department officials moved quickly to activate the new legislation to avert another depression which was threatening to engulf agriculture and other economic sectors in the Nation. Acreage allotments were in effect for corn and cotton harvested in 1938. The legislation was too late for acreage allotments to be effective for wheat harvested in 1938, because most of this wheat had been seeded in the fall of 1937. Wheat allotments were used only for calculating benefit payments. Marketing quotas were in effect during 1938 for cotton and for flue-cured, burley, and dark tobaccos. Marketing quotas could not be applied to wheat since the Act prohibited their use during the 1938-39 marketing year, unless funds for parity payments had been appropriated prior to May 15, 1938. Supplies of corn were under the level which required proclamation of marketing quotas.

The agricultural adjustment program became fully operative in the 1939-40 marketing year, when crop allotments were available to all farmers before planting time. Commodity loans were available in time for most producers to take advantage of them.

On cotton and wheat loans, the Secretary had discretion in determining the rate at a level between 52 and 75 percent of parity. A loan program was mandatory for these crops if prices fell below 52 percent of parity at the end of the crop year, or if production was in excess of a normal year's domestic consumption and exports. A more complex formula regulated corn loans with the rate graduated in relation to the expected supply, and with 75 percent of parity loans available when production was at or below normal as defined in the Act. Loans for commodities other than corn, cotton, and wheat were authorized, but their use was left to the Secretary's discretion.

Parity payments were made to the producers of cotton, corn, wheat, and rice who cooperated in the program. They were not made to tobacco producers under the 1939 and 1940 programs because tobacco prices exceeded 75 percent of parity. Appropriation language prohibited parity payments in this situation.

Although marketing quotas were proclaimed for cotton and rice, and for flue-cured, burley, and dark air-cured tobacco for the 1939-40 marketing year, only cotton quotas became effective. More than a third of the rice and tobacco producers participating in the referendums voted against quotas.

Without marketing quotas, flue-cured tobacco growers produced a recordbreaking crop and, at the same time, the growers faced a sharp reduction in foreign markets due to the withdrawal of British buyers about 5 weeks after the markets opened. The loss of outlets caused a shutdown in the flue-cured tobacco market. During the crisis period, growers approved marketing quotas for their 1940-41 crop, and the Commodity Credit Corporation, through a purchase and loan agreement, restored buying power to the market.

In addition to tobacco, marketing quotas were in effect for the 1941 crops of cotton, wheat, and peanuts. Marketing quotas for peanuts had been authorized by legislation approved on April 3, 1941.

Acreage allotments for corn and acreage allotments and marketing quotas for cotton, tobacco, and wheat reduced the acreage planted during the years they were in effect. For example, the acreage of wheat seeded dropped from a high of almost 81 million acres in 1937 to around 63 million in 1938; it remained below 62 million acres until 1944. Success in controlling acreage, which was most marked in the case of cotton, where marketing quotas were in effect every year until July 10, 1943, and where long-run adjustments were taking place, was not accompanied by a comparable decline in production. Yield per harvested acre began an upward trend for all four crops. The trend was most marked for corn, due largely to the use of hybrid seed.

High farm production after 1937, at a time when nonfarm income remained below 1937 levels, resulted in a decline in farm prices of approximately 20 percent from 1938 through 1940. The nonrecourse loans and payments helped to prevent a more drastic decline in farm income. Direct Government payments

reached their highest levels in 1939 when they were 35 percent of net cash income received from sales of crops and livestock. They were 30 percent in 1940, but fell to 13 percent in 1941 when farm prices and incomes began their ascent in response to the war economy.

In the meantime, the Department had been developing new programs to dispose of surplus food and to raise the nutritional level of low-income consumers. The direct distribution program, which began with the distribution of surplus pork in 1933, was supplemented by a nationwide school lunch program, a low-cost milk program, and a food stamp program. The number of schools participating in the school lunch program reached 66,783 during 1941. The food stamp program, which reached almost 4 million people in 1941, was discontinued on March 1, 1943 because of the wartime development of food shortages and relatively full employment.

Wartime Measures

The large stocks of wheat, cotton, and corn resulting from price-supporting loans, which had caused criticism of the Ever-Normal Granary, became a military reserve of crucial importance after the United States entered World War II. Concern over the need to reduce the buildup of Government stocks--a task complicated by legislative barriers such as the minimum national allotment of 55 million acres for wheat, the restrictions on sale of stocks of the Commodity Credit Corporation, and the legislative definition of farm marketing quotas as the actual production or normal production on allotted acreage--changed during the war and postwar period to concern about attainment of production to meet war and postwar needs.

On December 26, 1940, the Department asked farmers to revise plans and to have at least as many sows farrowing in 1941 as in 1940. Following the passage of the Lend-Lease Act on March 11, 1941, Secretary of Agriculture Claude R. Wickard announced, on April 3, 1941, a price support program for hogs, dairy products, chickens, and eggs at a rate above market prices. Hogs were to be supported at not less than $9 per hundredweight.

Congress decided that legislation was needed to insure that farmers shared in the profits which defense contracts were bringing to the American economy and as an incentive to wartime production. It passed legislation, approved on May 26, 1941, to raise the loan rates of cotton, corn, wheat, rice, and tobacco, for which producers had not disapproved marketing quotas, up to 85 percent of parity. The loan rates were available on the 1941 crop and were later extended to subsequent crops of cotton, corn, wheat, peanuts, rice, and tobacco.

Legislation raising the loan rates for basic commodities was followed by the "Steagall Amendment" on July 1, 1941. This Amendment directed the Secretary to support at not less than 85 percent of parity the prices of those nonbasic commodities for which he found it necessary to ask for an increase in production.

The rate of support was raised to not less than 90 percent of parity for corn, cotton, peanuts, rice, tobacco, and wheat, and for the Steagall nonbasic commodities, by a law approved on October 2, 1942. However, the rate of 85 percent of parity could be used for any commodity if the President should determine the lower rate was required to prevent an increase in the cost of feed for livestock and poultry and in the interest of national defense. This determination was made for wheat, corn, and rice. Since the price of rice was above the price support level, loans were not made.

The legislation of October 2, 1942, raised the price support level to 90 percent of parity for the nonbasic commodities for which an increase in production was requested. The following were entitled to 90 percent of parity by the Steagall Amendment: manufacturing milk, butterfat, chickens, eggs, turkeys, hogs, dry peas, dry beans, soybeans for oil, flaxseed for oil, peanuts for oil, American Egyptian cotton, Irish potatoes, and sweetpotatoes.

The price support rate for cotton was raised to 92 1/2 percent of parity and that for corn, rice, and wheat was set at 90 percent of parity by a law approved on June 30, 1944. Since the price of rice was far above the support level for rice, loan rates were not announced. The Surplus Property Act of October 3, 1944 raised the price support rate for cotton to 95 percent of parity with respect to crops harvested after December 31, 1943 and those planted in 1944. Cotton was purchased by the Commodity Credit

Corporation at the rate of 100 percent of parity during 1944 and 1945.

In addition to price support incentives for the production of crops needed for lend-lease and for military use, the Department gradually relaxed penalties for exceeding acreage allotments, provided the excess acreage was planted to war crops. In some areas during 1943, deductions were made in adjustment payments for failure to plant at least 90 percent of special war crop goals. Marketing quotas were retained throughout the war period on burley and flue-cured tobacco to encourage production of crops needed for the war. Marketing quotas were retained on wheat until February 1943. With the discontinuance of marketing quotas, farmers in spring wheat areas were urged to increase wheat plantings whenever the increase would not interfere with more vital war crops. Quotas were retained on cotton until July 10, 1943, and on fire-cured and dark air-cured tobacco until August 14, 1943. With controls removed, the adjustment machinery was used to secure increased production for war requirements and for postwar needs of people abroad who had suffered war's destruction.

Postwar Price Supports

With wartime price supports scheduled to expire on December 31, 1948, price support levels for basic commodities would drop back to a range of 52 to 75 percent of parity as provided in the Agricultural Adjustment Act of 1938, with only discretionary support for nonbasic commodities. Congress decided that new legislation was needed, and the Agricultural Act of 1948, which also contained amendments to the Agricultural Adjustment Act of 1938, was approved on July 3, 1948. The Act provided mandatory price support at 90 percent of parity for the 1949 crops of wheat, corn, rice, peanuts marketed as nuts, cotton, and tobacco marketed before June 30, 1950, if producers had not disapproved marketing quotas. Mandatory price support at 90 percent of parity or comparable price was also provided for Irish potatoes harvested before January 1, 1949; hogs; chickens over 3 1/2 pounds live weight; eggs; and milk and its products through December 31, 1949. Price support was provided for edible dry beans, edible dry peas, turkeys, soybeans for oil, flaxseed for oil, peanuts for oil, American Egyptian cotton, and sweetpotatoes through December 31, 1949, at not less than 60 percent of parity or comparable price nor higher than the level at which the commodity was supported in 1948. The Act authorized the Secretary of Agriculture to require compliance with production goals and marketing regulations as a condition of eligibility for price support to producers of all nonbasic commodities marketed in 1949. Price support for wool marketed before June 30, 1950, was authorized at the 1946 price support level, an average price to farmers of 42.3 cents per pound. Price support was authorized for other commodities through December 31, 1949, at a fair relationship with other commodities receiving support, if funds were available.

The parity formula was revised to make the pattern of relationships among parity prices dependent upon the pattern of relationships of the market prices of such commodities during the most recent moving 10-year period. This revision was made to adjust for changes in productivity and other factors which had occurred since the base period 1909-14.

Title II of the Agricultural Act of 1948 would have provided a sliding scale of price support for the basic commodities (with the exception of tobacco) when quotas were in force but it never became effective. The Act of 1948 was superseded by the Agricultural Act of 1949 on October 31, 1949.

The 1949 Act set support prices for basic commodities at 90 percent of parity for 1950 and between 80 percent and 90 percent for 1951 crops, if producers had not disapproved marketing quotas or (except for tobacco) if acreage allotments or marketing quotas were in effect. For tobacco, price support was to continue after 1950 at 90 percent of parity if marketing quotas were in effect. For the 1952 and succeeding crops cooperating producers of basic commodities--if they had not disapproved marketing quotas--were to receive support prices at levels varying from 75 to 90 percent of parity, depending upon the supply.

Price support for wool, mohair, tung nuts, honey, and Irish potatoes was mandatory at levels ranging from 60 to 90 percent of parity. Whole milk and butterfat and their products were to be supported at the level between 75

and 90 percent of parity which would assure an adequate supply. Wool was to be supported at such level between 60 and 90 percent of parity as was necessary to encourage an annual production of 360 million pounds of shorn wool.

Price support was authorized for any other nonbasic commodity at any level up to 90 percent of parity, depending upon the availability of funds and other specified factors, such as perishability of the commodity and ability and willingness of producers to keep supplies in line with demand.

Prices of any agricultural commodity could be supported at a level higher than 90 percent of parity if the Secretary determined, after a public hearing, that the higher price support level was necessary to prevent or alleviate a shortage in commodities essential to national welfare, or to increase or maintain production of a commodity in the interest of national security.

The Act amended the modernized parity formula of the Agricultural Act of 1948 to add wages paid hired farm labor to the parity index and to include wartime payments made to producers in the prices of commodities and in the index of prices received. For basic commodities, the effective parity price through 1954 was to be the "old" or the "modernized," whichever was higher. For many nonbasic commodities, the modernized parity price became effective in 1950. However, parity prices for individual commodities under the modernized formula, provided in the Act of 1948, were not to drop more than 5 percent a year from what they would have been under the old formula.

The Act provided for loans to cooperatives for the construction of storage facilities and for certain changes with respect to acreage allotment and marketing quota provisions, and directed that Section 32 funds be used principally for perishable, nonbasic commodities. The Act added some new provisions on the sale of commodities held by the Commodity Credit Corporation. Prices were to be supported by loans, purchases, or other operations.

Under authority of the Agricultural Act of 1949, price support for basic commodities was maintained at 90 percent of parity through 1950. Supports for nonbasic commodities were generally at lower levels during 1949 and 1950 than in 1948 whenever this was permitted by law. Price supports for hogs, chickens, turkeys, long-staple cotton, dry edible peas, and sweetpotatoes were discontinued in 1950.

The Korean War

The flexible price support provisions of the Agricultural Act of 1949 were used for only one basic commodity during 1951. Secretary Charles F. Brannan used the national security provision of the Act to keep price support levels at 90 percent of parity for all of the basic commodities except peanuts. The price support rate for peanuts was raised to 90 percent for 1952. The outbreak of the Korean War on June 25, 1950, made it necessary for the Department to adjust its programs to secure the production of sufficient food and fiber to meet any eventuality. Neither acreage allotments nor marketing quotas were in effect for the 1951 and 1952 crops of wheat, rice, corn, or cotton. Allotments and quotas were in effect for peanuts and most types of tobacco.

Prices of oats, barley, rye, and grain sorghums were supported at 75 percent of parity in 1951 and 80 percent in 1952. Naval stores, soybeans, cottonseed, and wool were supported both years at 90 percent, while butterfat was increased to 90 percent for the marketing year beginning April 1, 1951. Price support for potatoes was discontinued in 1951 in accordance with a law of March 31, 1950, which prohibited price support on the 1951 and subsequent crops unless marketing quotas were in effect. Congress never authorized the use of marketing quotas for potatoes.

The Korean War strengthened the case of Congressional leaders who did not want flexible price supports to become effective for basic commodities. Legislation of June 30, 1952, to amend and extend the Defense Production Act of 1950 provided that price support loans for basic crops to cooperators should be at the rate of 90 percent of parity, or at higher levels, through April 1953, unless producers disapproved marketing quotas.

The period for mandatory price support at 90 percent of parity for basic commodities was again extended by legislation approved on July 17, 1952. It covered the 1953 and 1954 crops of basic commodities if the producers had not disapproved marketing quotas. This legislation

also extended through 1955 the requirement that the effective parity price for the basic commodities should be the parity price computed under the new or the old formula, whichever was higher. Extra long staple cotton was made a basic commodity for price support purposes.

Levels of Price Support--Fixed or Flexible

The end of the Korean War in 1953 necessitated changes in price support, production control, and related programs. For the next 8 years, controversy over levels of support--high, fixed levels versus a flexible scale--dominated the scene.

Secretary of Agriculture Ezra Taft Benson proclaimed marketing quotas for the 1954 crops of wheat and cotton on June 1, 1953, and October 9, 1953, respectively. The major types of tobacco and peanuts continued under marketing quotas. However, quotas were not imposed on corn. The Secretary announced on February 27, 1953, that dairy prices would be supported at 90 percent of parity for another year beginning April 1, 1953. Supports were continued at 90 percent of parity for basic crops during 1953 and 1954, in accordance with the legislation of July 17, 1952.

The Agricultural Trade Development and Assistance Act, better known as Public Law 480, was approved July 10, 1954. This Act, which served as the basic authority for sale of surplus agricultural commodities for foreign currency, proved to be of major importance in disposing of farm products abroad.

The Agricultural Act of 1954, approved August 28, 1954, established price supports for the basic commodities on a flexible basis, ranging from 82.5 percent of parity to 90 percent for 1955 and from 75 percent to 90 percent thereafter; an exception was tobacco, which was to be supported at 90 percent of parity when marketing quotas were in effect. The transition to flexible supports was to be eased by "set asides" of basic commodities. Not more than specified maximum nor less than specified minimum quantities of these commodities were to be excluded from the "carryover" for the purpose of computing the level of support. Special provisions were added for various commodities. One of the most interesting, under the National Wool Act, required that the price of wool be supported at a level between 60 and 110 percent of parity, with payments to producers authorized as a method of support. This method of support has continued in effect.

The Soil Bank

The Soil Bank, established by the Agricultural Act of 1956, was a large-scale effort, similar in some respects to programs of the 1930's, to bring about adjustments between supply and demand for agricultural products by taking farmland out of production. The program was divided into two parts--an acreage reserve and a conservation reserve. The specific objective of the acreage reserve was to reduce the amount of land planted to allotment crops--wheat, cotton, corn, tobacco, peanuts, and rice. Under its terms, farmers cut land planted to these crops below established allotments, or, in the case of corn, their base acreage, and received payments for the diversion of such acreage to conserving uses. In 1957, 21.4 million acres were in the acreage reserve. The last year of the program was 1958.

All farmers were eligible to participate in the conservation reserve by designating certain crop land for the reserve and putting it to conservation use. A major objection to this plan in some areas was that communities were disrupted when many farmers placed their entire farms in the conservation reserve. On July 15, 1960, 28.6 million acres were under contract in this reserve.

The Agricultural Act of August 28, 1958, made innovations in the cotton and corn support programs. It also provided for continuation of supports for rice, without requiring the exact level of support to be based on supply. Price support for most feed grains became mandatory.

For 1959 and 1960, each cotton farmer was to choose between (a) a regular acreage allotment and price support, or (b) an increase of up to 40 percent in allotment with price support 15 points lower than the percentage of parity set under (a). After 1960, cotton was to be under regular allotments, supported between 70 and 90 percent of parity in 1961 and between 65 and 90 percent after 1961.

Corn farmers, in a referendum to be held not later than December 15, 1958, were given the option of voting either to discontinue acreage

allotments for the 1959 and subsequent crops and to receive supports at 90 percent of the average farm price for the preceding 3 years but not less than 65 percent of parity, or to keep acreage allotments with supports between 75 and 90 percent of parity. The first proposal was adopted for an indefinite period in a referendum held November 25, 1958.

Farm Programs in the 1960's

President John F. Kennedy's first executive order after his inauguration on January 20, 1961, directed Secretary of Agriculture Orville L. Freeman to expand the program of food distribution to needy persons. This was done immediately. A pilot food stamp plan was also started. In addition, steps were taken to expand the school lunch program and to make better use of American agricultural abundance abroad.

The new Administration's first law dealing with agriculture, the Feed Grain Act, was approved March 22, 1961. It provided that the 1961 crop of corn should be supported at not less than 65 percent of parity (the actual rate was 74 percent), and established a special program for diverting corn and grain sorghum acreage to soil-conserving crops or practices. Producers were eligible for price supports only after retiring at least 20 percent of the average acreage devoted to the two crops in 1959 and 1960.

The Agricultural Act of 1961 was approved August 8, 1961. Specific programs were established for the 1962 crops of wheat and feed grains, aimed at diverting acreage from these crops. The Act authorized marketing orders for peanuts, turkeys, cherries and cranberries for canning or freezing, and apples produced in specified States. The National Wool Act of 1954 was extended for 4 years, and Public Law 480 was extended through December 31, 1964.

The Food and Agriculture Act of 1962, signed September 27, 1962, continued the feed grain program for 1963. It provided that price supports would be set by the Secretary between 65 and 90 percent of parity for corn and related prices for other feeds. Producers were required to participate in the acreage diversion as a condition of eligibility for price support.

The Act of 1962 provided supports for the 1963 wheat crop at $1.82 a bushel (83 percent of parity) for farmers complying with existing wheat acreage allotments, and offered additional payments to farmers retiring land from wheat production.

Under the new law beginning in 1964, the 55-million-acre minimum national allotment of wheat acreage was permanently abolished, and the Secretary could set allotments as low as necessary to limit production to the amount needed. Farmers were to decide between two systems of price supports. The first system provided for the payment of penalties by farmers overplanting acreage allotments and provided for issuance of marketing certificates based on the quantity of wheat estimated to be used for domestic human consumption and a portion of the number of bushels estimated for export. The amount of wheat on which farmers received certificates would be supported between 65 and 90 percent of parity; the remaining production would be set at a figure based upon its value as feed. The 15-acre exemption was also to be cut. The second system imposed no penalties for overplanting, but provided that wheat grown by planters complying with allotments would be supported at only 50 percent of parity.

The first alternative was defeated in a referendum held on May 21, 1963, but a law passed early in 1964 kept the second alternative from becoming effective.

On May 20, 1963, another feed grain bill permitted continuation in 1964-65, with modifications, of previous legislation. It provided supports for corn for both years at 65 to 90 percent of parity, and authorized the Secretary to require additional acreage diversion.

The most important farm legislation in 1964 was the Cotton-Wheat Act, approved April 11, 1964. The Secretary of Agriculture was authorized to make subsidy payments to domestic handlers or textile mills in order to bring the price of cotton consumed in the United States down to the export price. Each cotton farm was to have a regular and a domestic cotton allotment for 1964 and 1965. A farmer complying with his regular allotment was to have his crop supported at 30 cents a pound (about 73.6 percent of parity). A farmer complying with his domestic allotment would receive a support price up to 15 percent higher (the actual figure in 1964 was 33.5 cents a pound).

The Cotton-Wheat Act of 1964 set up a voluntary wheat-marketing certificate program for

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1964 and 1965, under which farmers who complied with acreage allotments and agreed to participate in a land-diversion program would receive price supports, marketing certificates, and land-diversion payments, while noncompliers would receive no benefits. Wheat food processors and exporters were required to make prior purchases of certificates to cover all the wheat they handled. Price supports, including loans and certificates, for the producer's share of wheat estimated for domestic consumption (in 1964, 45 percent of a complying farmer's normal production) would be set from 65 to 90 percent of parity. The actual figure in 1964 was $2 a bushel, about 79 percent of parity. Price supports, including loans and certificates, on the production equivalent to a portion of estimated exports (in 1964, also 45 percent of the normal production of the farmer's allotment) would be from 0 to 90 percent of parity. The export support price in 1964 was $1.55 a bushel, about 61 percent of parity. The remaining wheat could be supported from 0 to 90 percent of parity; in 1964 the support price was at $1.30, about 52 percent of parity. Generally, price supports through loans and purchases on wheat were at $1.30 per bushel in 1964, around the world market price, while farmers participating in the program received negotiable certificates which the Commodity Credit Corporation agreed to purchase at face value to make up the differences in price for their share of domestic consumption and export wheat. The average national support through loans and purchases on wheat in 1965 was $1.25 per bushel.

The carryover of all wheat on July 1, 1965, totaled 819 million bushels, compared with 901 million bushels in 1964 and 1.3 billion bushels in 1960.

The Food and Agriculture Act of 1965

Programs established by the Food and Agriculture Act of 1965, approved November 3, 1965, are to be in effect from 1966 through 1969. After approval of the plan in referendum, each dairy producer in a milk marketing area is to receive a fluid milk base, thus permitting him to cut his surplus production. The Wool Act of 1954 and the voluntary feed grain program begun in 1961 are extended through 1969.

The market price of cotton is to be supported at 90 percent of estimated world price levels, thus making payments to mills and export subsidies unnecessary. Incomes of cotton farmers are to be maintained through payments based on the extent of their participation in the allotment program, with special provisions for protecting the income of farmers with small cotton acreages. Participation is to be voluntary (although price support eligibility generally depends on participation) with a minimum acreage reduction of 12.5 percent from effective farm allotments required for participation on all but small farms.

The voluntary wheat certificate program begun in 1964 is extended through 1969 with only limited changes. The rice program is to be continued, but an acreage diversion program similar to wheat is to be effective whenever the national acreage allotment for rice is reduced below the 1965 figure.

The Act established a cropland adjustment program. The Secretary is authorized to enter into 5- to 10-year contracts with farmers calling for conversion of cropland into practices or uses which will conserve water, soil, wildlife, or forest resources, or establish or protect or conserve open spaces, national beauty, wildlife or recreational resources, or prevent air or water pollution. Payments are to be not more than 40 percent of the value of the crop that would have been produced on the land. Contracts entered into in each of the next 4 fiscal years may not obligate more than $225 million per calendar year.

The Food and Agriculture Act of 1965, which offers farmers a base for planning for the next 4 years, continues many of the features which have characterized farm legislation since 1933. For a third of a century, price support and adjustment programs have had an important impact upon the farm and national economy. Consumers have consistently had a reliable supply of farm products, but the proportion of consumers' income spent for these products has declined. The legislation and resulting programs have been modified to meet varying conditions of depression, war, and prosperity, and have sought to give farmers, in general, economic equality with other segments of the economy.

A Study of the Meat Products Industry Through Systems Analysis and Simulation of Decision Units

By Lawrence A. Duewer and Wilbur R. Maki

A RESEARCH PROCEDURE has long been needed for concurrent study of individual parts of an industry and the industry as a whole. Some researchers have isolated a segment of the industry and explored it in great detail; but they have failed to place it in perspective with other parts of the industry. Other researchers have studied the industry as an aggregate without identifying cause-and-effect relationships.

In this article, the livestock-meat industry is examined from the systems analysis standpoint by focusing on the interrelationships and interactions among the various parts of the industry. A model of the meat-products industry is presented that involves the use of a series of subsystems to represent a sequence of events characterizing the industry. Because of the size and complexity of the model, the program was written in FORTRAN and solved on a digital computer.

The analytical model was first constructed and tested to determine whether it adequately represented and reproduced the workings of the industry. Next, by making selected changes in the model or data and then obtaining a new set of results, the effects of each change were simulated. When these two sets of results--the basic run and the simulation runs--were compared, each difference obtained was viewed as a direct effect of the change made in the simulation run.

Model Construction

Data used in the model represented 2 percent of the firms in the Iowa meat-products industry.[1] The fundamental model design could be adapted for use in other geographic areas and in the study of other industries.

The meat-products industry was defined as including all groups and activities involved in the movement and processing of livestock from the producer to the consumer: Producers, livestock markets, slaughterers, processors, wholesalers, retailers, and households. Within each of these groups were a number of individual decision units.

The model used the individual decision units as the essential elements in the interrelationships and interactions of the industry. The model included program sequences to reconstruct and complete transactions between decision units. These sequences were represented by a series of equations depicting purchases, sales, bargaining arbitration, and levels of production and demand.

Several decision criteria were used to determine the price and quantity in each transaction. Other decision criteria were used to determine whether firms should enter or leave the industry. In addition, preference functions were used to select transaction partners. Provision was also made in the program to use historical data in current decisions. Finally, the program allowed a specific sequence or process to be repeated for several weeks.

Model Details and Examples

The processor and slaughterer were combined in the model developed because these functions are often combined in the industry and because it was desired to reduce the number of groups in the program.[2] The scaling of the model to

[1] Lawrence A. Duewer, Market Simulation of Economic Behavior in the Meat-Products Industry, unpublished Ph.D. thesis, Iowa State Univ. Sci. and Tech., Ames, Iowa, 1965.

[2] When reference is made to the real world, rather than the model, the term "industry" is used.

depict 2 percent of the Iowa industry and the use of representative households, livestock markets, and producers were decisions required to comply with computer storage capacity and to reduce machine running time. The representative decision units in the model used the multiple values in table 1 to keep quantities consistent among groups of decision units. Provision was also made to allow shipments of meat from Iowa.

Table 1.--Groups and decision units used in the model

Group	Number of decision units used	Multiple value	2 percent of Iowa
Households.....	60	280	16,800
Retailers.....	20	1	20
Wholesalers.....	5	1	5
Processor-slaughterers...	4	1	4
Livestock markets.....	4	4	16
Producers.....	16	100	1,600

The transaction and decision arrangements in the model were completed for a 1-week period. This period was selected to represent demand decisions realistically. Consumers usually shop at least once each week; retailers, wholesalers, and processor-slaughterers also make many of their decisions on a weekly basis. The program can be continued for several weeks. The basic run was completed for 8 consecutive weeks and the simulation runs for 4 weeks each. These time periods were about the minimum that could be used to obtain sufficient information concerning changes throughout the industry.

Three meat classes were included in the model: Pork, beef, and other meat. "Other meat" included poultry and all red meats except pork and beef.

A diagram of the model used to represent the meat-products industry is shown in figure 1. A livestock producer may sell direct to a processor-slaughterer located either near a terminal or in the interior. He may also sell through a terminal market or to a local dealer. The producer's preference of livestock market

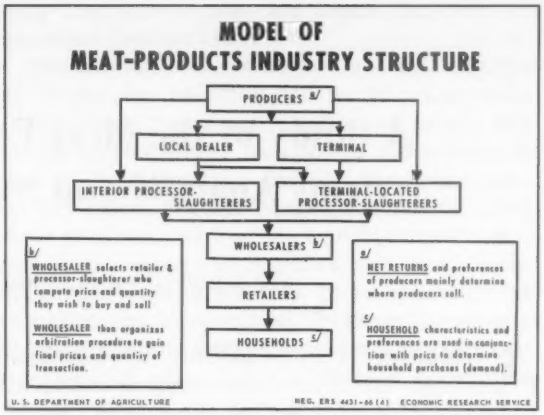
MODEL OF
MEAT-PRODUCTS INDUSTRY STRUCTURE
PRODUCERS a/
LOCAL DEALER
TERMINAL
INTERIOR PROCESSOR-SLAUGHTERERS
TERMINAL-LOCATED PROCESSOR-SLAUGHTERERS
WHOLESALERS b/
RETAILERS
HOUSEHOLDS c/
b/
WHOLESALER selects retailer & processor-slaughterer who compute price and quantity they wish to buy and sell
WHOLESALER then organizes arbitration procedure to gain final prices and quantity of transaction.
a/
NET RETURNS and preferences of producers mainly determine where producers sell.
c/
HOUSEHOLD characteristics and preferences are used in conjunction with price to determine household purchases (demand).
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 4431-66 (4) ECONOMIC RESEARCH SERVICE

Figure 1

is determined by a preference equation of the form:

$$(1) \quad Y_t = a + b_1X_{1,t} + b_2X_2 + b_3X_3 + A$$

where

Y_t = the preference index value held by the producer this week for this livestock market,

$X_{1,t}$ = the price, in dollars per pound, offered the producer this week at this livestock market,

X_2 = the distance in miles this producer is from this livestock market,

X_3 = an index value of the attitude this producer has toward this livestock market, and

A = the constant value of 0.2 if this producer sold to this livestock market last week and 0.0 if he did not.

A unique solution is obtained for each producer in relation to each livestock market. The market yielding the highest value for this producer is where the livestock is sold. Preference equations are used in the model whenever a decision unit desires to transact business and needs a transaction partner.

If the producer sells through a terminal, the animals are sold to a processor-slaughterer located at a terminal. The local dealer may resell his purchases to a processor-slaughterer located either in the interior or at the terminal market.

The wholesaler acts as an organizer of transactions between retailers and processor-slaughterers. In the model he selects a retailer and a processor-slaughterer on the basis of his preference function. Each of the selected businessmen takes into account the relevant supply and demand conditions, to determine the price he wishes to pay or receive and the quantity he wishes to buy or sell.

Operationally, the wholesaler then checks to see if the retailer is willing to pay enough more than the processor-slaughterer price to repay the costs incurred by the wholesaler. In addition, a check is made to see if the retail quantity desired is equal to or more than the amount the processor-slaughterer wants to sell this retailer. If either result is negative, the processor-slaughterer is allowed to revise his price and quantity and the wholesaler completes the checks again. If the checks still are not both positive, the retailer is allowed to revise his price and quantity and the wholesaler makes the check once more. If the results are not equal or positive at this point, the sale is completed with the prices desired by each firm, using the processor-slaughterer's quantity. The wholesaler thus may not obtain the margin desired. If the results are equal or positive at any point, the transaction is confirmed. To illustrate, the first retail price equation is of the form:

$$(2)\quad P_t = a + b_1 X_{1,t-1} + b_2 X_{2,t-1} + b_3 X_{3,t}$$

where

P_t = the price at which this retailer wishes to purchase this meat class through this wholesaler this week,

$X_{1,t-1}$ = the price paid by this retailer for this meat class last week,

$X_{2,t-1}$ = the price charged to his customers by this retailer for this meat class last week, and

$X_{3,t}$ = the quantity of this meat class that this retailer wants to purchase through this wholesaler this week.

The household group provides the final demand for meat products. For a given week, the prices to the consumer do not change, but consumers can indicate their approval or disapproval by the quantities they purchase at the prices charged. The demand relationships used, including the relevant variables, are presented in figure 2.

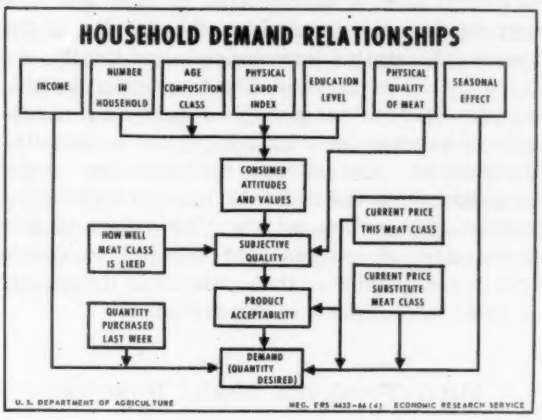

Figure 2

An additional example is presented to indicate the technique used for making decisions. The decision criterion selected is the test to see if the household has purchased at least a minimum quantity of all meat combined. This is represented by a FORTRAN statement of the form:

(3) IF (TMETC(IC)) - B70) 179, 178, 178

where

TMETC (IC) = total pounds of all meat classes purchased by this household and

B70 = minimum quantity (5 pounds) required to be purchased by each household.

Thus, the statement tests whether the amount purchased (TMETC(IC)) is greater than the amount required (B70). If the subtraction is negative, insufficient meat is purchased and the program continues by moving to program statement 179 where the order quantities are revised. If as much or more meat than the minimum required is purchased, the program moves to the next household's computations (program statement 178).

The model begins with the retailer, wholesaler, processor-slaughterer transaction sequence; it next determines the results of the household-retailer interactions; and finally, the sales by the producers. The interaction involving the wholesaler, acting to carry out transactions between the retailer and the processor-slaughterer, was chosen to begin the model because it appears to be the basic or controlling position for price setting. The result of this interaction of supply and demand to obtain prices and quantities then influences the results of other interactions in the system.

Meat-Products Model Results

The results of the basic run provide a test of the model. They also provide a standard for comparison with results obtained from the simulation runs. The entire set of values obtained in the basic run would require many tables. We therefore show here only the names of the main variables, by industry segment, for which results were obtained:

Consumers:
- Price to consumer
- Quantity each consumer purchases
- Product acceptability index

Retailers:
- Price retailer pays
- Amount each retailer buys
- Amount each retailer sells
- Retailer inventory levels

Wholesalers:
- Quantities each wholesaler handles
- Wholesaler profits

Processor-slaughterers:
- Price processor-slaughterer receives
- Price paid by processor-slaughterer
- Quantity each processor-slaughterer buys
- Quantity each processor-slaughterer sells
- Processor-slaughterer inventory levels

Livestock markets:
- Price livestock market pays producer
- Net price received by livestock market when selling to processor-slaughterer
- Quantity purchased by each livestock market

Producers:
- Net price received by producer
- Computed minimum price producer will accept
- Amount each producer sells

Miscellaneous:
- Various totals
- Entry and exit of firms
- Preference values and behavior indexes

The value for each of the variables is computed for each decision unit in the group, for each meat class, and for each model week. Table 2 presents the average pork price levels of all decision units in the group for five price variables for the 8 weeks of the basic run.

Table 2.--Pork price levels, in dollars per pound, at various stages in the industry, by weeks

Variable	Week							
	1	2	3	4	5	6	7	8
Price to consumer.....	0.455	0.493	0.487	0.485	0.486	0.492	0.495	0.498
Price retailer pays....	.391	.385	.383	.386	.389	.391	.395	.383
Price Processor-slaughterer receives.	.324	.330	.339	.325	.337	.353	.336	.317
Price paid by processor-slaughterer....	.297	.295	.299	.298	.295	.296	.302	.297
Price livestock market pays producer.....	.290	.287	.291	.290	.288	.289	.293	.289

The information in table 2, along with the rest of the basic run results, illustrates the kind of results obtained by the model. These findings seem consistent with actual industry levels.

The following changes were made to provide seven simulation runs:

1. Increased production by 10 percent.
2. Increased consumer demand by 10 percent.
3. Changed retailer advertising to stress pork.
4. Increased each consumer's income $1,000 per year.

5. Changed the pattern of attitudes by the producer toward livestock markets.

6. Increased the minimum price the producer would accept by 5 cents per pound for pork and 2 cents per pound for beef and other meat.

7. Increased the levels of all historical data 10 percent.

These changes indicate the type of conditions that can be studied. The directions of change observed are as expected, considering economic principles and practices of the industry. For example, the production increase caused prices to decrease, and the increase in consumer incomes caused meat consumption to increase. In some cases, however, the magnitude of the change was small. For instance, the increase in consumer demand did cause the price to the consumer to increase, but only by about 0.2 cent per pound. Several current trends in the industry are supported by the study results: for example, the decrease in the number of retailers and the increase in retailer size.

Conclusions

The example discussed indicates that a systems analysis approach that involves the simulation of individual decision units can be used to realistically represent the meat-products industry. However, further refinement of this type of model and improvements in the data are needed to further examine the workings of the meat-products industry. With appropriate changes in the model, this type of analysis could be applied to other industries. For instance, different industry groups would be required, but the transaction sequences between decision units would be similar.

The procedures discussed in this article provide a method of examining both the entire industry and the various subsystems within the industry. The use of simulation in conjunction with a systems analysis model provides a laboratory for testing possible changes.

A Procedure for Estimating Value Added in Food Distribution

By William T. Wesson and Allen B. Paul

WHILE THE Bureau of the Census, in the Census of Manufactures, has published data on value added for more than a century, similar data were not available for distribution industries until now. In 1965, the Census Bureau published "Measures of Value Produced in and by Merchant Wholesaling Firms, 1963" (12)[1]--a milestone in the collection of primary data for commodity distribution.

Ten years ago, Harold Barger (1) estimated value added by wholesalers and retailers from various margin data and from estimates of the proportions of goods that had passed through the different channels. (The latter were largely based on revisions and extensions of the pioneering work of Simon Kuznets (3)). Barger's estimates of value added (a somewhat grosser concept than that used in the Census of Manufactures) were made for 10-year intervals, 1869-1948, highly aggregated into wholesale and retail sectors.

The new census study examines merchant wholesalers by kind of business. Aside from providing detail, it presents several measures of net output that are in current use. Thus, it opens up new possibilities of making wider comparisons.

That some net output measure of distribution is needed in economic analysis is beyond dispute.[2] The actual or potential uses are in determining trends of output of different processing, transport, storage, and merchandising services; productivity of labor and capital; the nature of and changes in demands for different sets of services; the relation between fluctuations in prices of marketing services and those for farm commodities; and ways in which marketing firms might combine enterprises to provide services. The precise output measure needed in each case would depend on the purpose at hand.

Such basic data for the food distribution sectors still are incomplete. While new primary data for the merchant wholesaling sector are now available, there are no such data for food retailing or the restaurant sector. Moreover, historical data are absent.

In this paper we describe and partially evaluate a method of estimating net output for the food industries, using corporate tax returns. A study was made of a small group of returns of companies whose largest percentage of total receipts was from food manufacturing, food wholesaling, or food retail stores. For comparisons with published Census of Manufactures data, 1947 and 1954 returns were used; for comparisons with published census data on food wholesaling and retailing, 1948 and 1954 returns were used. Characteristics and limitations of the sample of tax returns used will be shown in the course of the discussion.

The corporate tax returns call for the listing of merchandise bought for manufacture or sale in the schedule entitled "cost of goods sold." Other listings in this schedule are inventory at beginning of year, inventory at end of year, salaries and wages, and "other costs per books." Thus, the cost of goods sold schedule is an aggregate whose meaning may vary from company to company according to how much labor and other costs are included along with costs of merchandise. The meaning of merchandise cost (adjusted or unadjusted for inventory change) is less ambiguous, even though nonuniformity in taxpayer responses to this entry may pose a serious problem.

[1] Underscored numbers in parentheses refer to the Literature Cited, p. 95.

[2] Some empirical uses of value added as well as its acceptance as an analytical concept are evident in a number of publications (2 and 4-9).

The difference between the business receipts[3] of a company and its cost of merchandise purchased for manufacture or sale might be a useful measure of net output. This difference may be called the value added, denoting the general idea that a company's output is unduplicated by the output of another group of firms.[4] This is the generic meaning. The problem is to uncover, if possible, the amount of unduplicated output for a given firm. To avoid confusion, in this paper we use value added in its generic sense--except where quotation marks or other indicators of specific meaning are given.

There is reason to believe that value added as derived from tax returns is a grosser measure than census value added by manufactures. The latter excludes the cost of supplies, containers, fuel, electricity, and contract work, whereas the former ordinarily does not. The divergence between the two measures probably would be smaller for food distribution than for food manufacturing because these items of cost are less important in distribution. However, other differences would exist because activities are reported on a corporate basis for tax purposes, whereas they are reported on an establishment basis to the Census of Manufactures. For example, a food processing company that also operates sales branch houses would ordinarily include the sales activity in its tax returns. Similarly, a food retailer might include central warehouse activities in its tax returns. Thus, tax records do not separate data by principal lines of activity as census data do.

A pragmatic test of the estimating procedure is to see how closely it approximates known net output measures. Fairly direct comparisons of tax data with Census of Manufactures data for 1947 and 1954 can be made for five main lines of processing--meat products, dairy products, canned and frozen foods, grain mill products, and bakery products. For wholesaling and retailing sectors, some indirect comparisons with census data and with data in Barger's study (1) are possible. After making these comparisons, we shall have a perspective from which to discuss the sources of noncomparability.

[3] Before 1958, the equivalent to the "business receipts" was called "gross sales and gross receipts from operations" in tax returns.

[4] It should be noted that the corporate tax form provides neither for this computation nor for the language used here.

The Sample

The tax returns used here came from a U.S. Department of Agriculture sample of returns of corporations engaged primarily in food manufacturing, food wholesaling, and food retailing. The sample was selected by the Department from a group of corporation tax returns to which it had official access for research purposes. Representativeness was sought by size of company. Among several problems encountered was the significant loss of data due mainly to the requirements imposed by this study. Adjustments of the usable data were made for over- or under-representation of the different company sizes. Because of these and other sampling limitations, the present results should be used with considerable caution. Even so, they are interesting and suggestive.

The 1954 sample of 341 tax returns used here represents 6 percent of the total corporate sales of five major food processing industries (3-digit Standard Industrial Classification) as shown in the Source Book of the Statistics of Income (13). The 1947 sample of 280 returns represents 7 percent of sales in that year. Sales of the meat and dairy products industries in 1947 and 1954 represent less than 3 percent of their respective totals. In these industries, representation of large firms is deficient.[5] But for bakery products the representation is over 20 percent. The grain mill products and processed fruit and vegetable sectors fall in between (tables 1 and 2).

Such statistical characteristics of the sample suggest that results obtained here for some 3-digit SIC industries may be subject to a high sampling error. But the total sample for the five industries seems sufficiently representative of food processing to be useful for appraising our estimating procedure.

The term "food wholesaling" as used here refers to merchant wholesalers of groceries and related products. The sample includes 35 returns for 1954 and 41 returns for 1948. Their

[5] The sample of meat product corporations for 1954 did not include any firms with assets of over $5 million, whereas the total corporate meat products industry as reported in the Source Book for the same year showed 30 returns with total assets of over $5 million. These 30 firms accounted for over 68 percent of the industry's corporate sales in 1954.

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Table 1.--Number of firms in sample of food processing corporations, and ratio of sales to total sales of corporate food processors, selected 3-digit (SIC) industries, 1947 and 1954

Industry	Firms in sample		Sales of sample as percentage of total	
	1947	1954	1947	1954
	Number	*Number*	*Percent*	*Percent*
Meat products	62	72	1.9	1.9
Dairy products	28	28	2.8	2.9
Canned fruits and vegetables	88	104	12.7	6.5
Grain mill products	54	58	18.1	5.5
Bakery products	48	79	24.5	30.5
Total	280	341	7.1	6.3

Table 2.--Distribution of sales by asset size group: Sample of food processing corporations, and all food processing corporations, selected industries, 1947 and 1954

Industry and asset size group[1]	1947		1954	
	Total corporate[2]	Sample	Total corporate[2]	Sample
	Percent	*Percent*	*Percent*	*Percent*
Meat products:				
under $0.25 mil.	3.9	16.7	4.0	10.3
$0.25 mil. under $1 mil.	22.6	32.9	10.4	36.5
$1 mil. and over	73.5	50.4	85.6	53.2
Dairy products:				
under $0.25 mil.	10.1	6.6	7.8	4.5
$0.25 mil. under $1 mil.	13.2	10.8	9.4	7.5
$1 mil. and over	76.7	82.6	82.8	88.0
Canned fruits and vegetables:				
under $0.25 mil.	7.0	3.2	5.4	4.4
$0.25 mil. under $1 mil.	16.3	10.3	13.7	16.1
$1 mil. and over	76.7	86.5	80.9	79.5
Grain mill products:				
under $0.25 mil.	7.5	1.6	4.6	3.3
$0.25 mil. under $1 mil.	18.7	41.6	11.8	11.3
$1 mil. and over	73.8	56.8	83.6	85.4
Bakery products:				
under $0.25 mil.	14.7	1.4	11.0	1.7
$0.25 mil. under $1 mil.	19.4	3.6	18.1	3.8
$1 mil. and over	65.9	95.0	70.9	94.5

[1] The 3 size groups total 100 percent.
[2] Refers to corporate sales reported in Source Book (13).

sales represent 2.2 percent of total corporate food wholesaling sales in 1954 and 2.5 percent in 1948.

Merchant food wholesalers tend to specialize in product lines. As a result, there are merchant wholesalers of the following types: General-line grocery, confectionery, fish and seafood, meat, specialty line, dairy products, poultry, and fresh fruits and vegetables. For example, listings frequently include subtype specialist wholesalers. A case in point is the specialty line which includes restaurant, bread, canned goods, flour, etc.

The fact that food wholesalers are specialized according to product line or on some other basis means that the different specialist groups provide different types and quantities of marketing services per unit of commodity handled. Consequently, value added would be expected to differ among the several types of food wholesalers. Ideally, it would be desirable to have data for measuring the value of services or value added by each specialty. Estimates of value added by food wholesaling, based on a sample of corporate firms, refer to merchant food wholesalers as a group.

For 1954, the food retailing sample includes 37 returns representing 12 percent of the sales of corporate food retailers shown in the Source Book. For 1948, the sample of 32 returns represents 11 percent of sales. The sector consists of grocery stores and commodity specialty stores such as meat markets and dairy products stores. The type, quantity, and value of marketing services may, and frequently do, differ widely among the different types of food stores. Here, as in the case of food wholesaling, the sample was not designed to measure differences among types of operation. It represents retail food stores in general.

Value Added Estimates and Comparisons

FOOD MANUFACTURING

If business receipts were to correspond closely to census "value of shipments" and the cost of merchandise purchased for manufacture or sales to census "cost of materials, supplies, containers, purchased electrical energy and contract work," then large disparities between value added derived from tax returns and the census "value added by manufacture" would not be due to differences in definition. But an important difference in definition exists--i.e., the cost of merchandise bought for manufacture and sale ordinarily does not include supplies, containers, purchased electrical energy, and contract work. On this count, estimates of the census value added using tax returns would be biased upward.

To get around this difficulty, we used ratios of value added (as we compute it from tax returns) to business receipts, and of census value added by manufacture to value of shipments (columns 5 and 6, table 3). If reasonable stability exists in these ratios between 1947 and 1954, the ratios can be applied to industry business receipts in the Source Book to obtain a fairly accurate estimate of the census value added by manufacture.

Unadjusted census data for 1954 were used in the analysis to maintain comparability with 1947; adjusted data for 1947 were unavailable. Similarly, our estimates of value added from the sample were not adjusted for inventory changes.

Our results for each of the five industries for the 2 census years are fairly constant. The differences are smaller on combining 3-digit industries. The difference between the 1947 and 1954 totals for the five industries (columns 5 and 6, table 3) is only about 2 percent.

The differences in the size of the ratios among 3-digit industries have a separate significance. While our computation of value added from tax returns tends to bias the ratio upward because of definitions used, differences in the composition of activities represented by company statistics versus establishment statistics also tend to bias this ratio. The direction of the latter bias would be up or down, depending on whether secondary lines of company activity reported in the tax returns take a higher or lower markup on sales than the primary manufacturing lines. An industry with many distribution activities outside the scope of the Census of Manufactures would tend to have its ratio biased downward. Because these biases exist, the absolute level of the ratios is less important than their stability.

Table 3.--Sales and value added, census enumeration and sample, selected food processing industries, 1947 and 1954[1]

Item	1947		1954		1947 ratio of census to sample (col. 1 ÷ col. 2) (5)	1954 ratio of census to sample (col. 3 ÷ col. 4) (6)	Percentage change in ratios (col. 6 ÷ col. 5) (7)
	Census (1)	Sample (2)	Census (3)	Sample (4)			
Meat products:							
Sales (mil. dol.).....	11,050	213.7	12,579	249.4	--	--	--
Value added:							
Mil. dol.....	1,280	27.9	1,931	47.3	--	--	--
Percent of sales.....	11.6	13.1	15.4	19.0	0.885	0.811	-8.4
Dairy products:							
Sales (mil. dol.).....	3,322	98.7	3,189	119.5	--	--	--
Value added:							
Mil. dol.....	688	37.1	781	51.9	--	--	--
Percent of sales.....	20.7	37.6	24.5	43.4	.551	.565	+2.5
Canned and frozen food:							
Sales (mil. dol.).....	2,462	277.5	3,758	220.1	--	--	--
Value added:							
Mil. dol.....	914	130.0	1,301	103.4	--	--	--
Percent of sales.....	37.1	46.9	34.6	47.0	.791	.736	-7.0
Grain mill products:							
Sales (mil. dol.).....	[2] 5,687	322.9	[2] 5,886	251.6	--	--	--
Value added:							
Mil. dol.....	[2] 1,129	60.0	[2] 1,394	52.0	--	--	--
Percent of sales.....	19.9	18.6	23.7	20.7	1.070	1.145	+7.0
Bakery products:							
Sales (mil. dol.).....	2,944	620.2	3,824	978.1	--	--	--
Value added:							
Mil. dol.....	1,363	303.0	1,977	553.3	--	--	--
Percent of sales.....	46.3	48.4	51.7	56.6	.957	.913	-4.6
Total:							
Sales (mil. dol.).....	25,465	1,533.0	29,236	1,818.7	--	--	--
Value added:							
Mil. dol.....	5,368	558.0	7,384	807.9	--	--	--
Percent of sales.....	21.1	[3] 25.0	25.3	[3] 30.7	.834	.816	-2.2

[1] Census data published in 1954 Census of Manufactures, Vol. II, Industry Statistics, Part I, Table 2A, excluding dairy products. The latter data appear in table 1 of 20B-5 on a retabulated basis to overcome changes in definition. Neither year includes figures for fluid milk plants. The value added data are unadjusted. The word "sales" is used here to cover 1947 and 1954 gross sales and gross receipts from operations (called "business receipts" in the 1958 and subsequent tax returns) and census value of shipments.

Value added derived from tax data was computed as the difference between business receipts and the cost of merchandise bought for manufacture or sale. It was not adjusted for changes in inventories between the beginning and end of the year.

[2] Includes data for the "corn wet milling" industry to be comparable with sample data classification.

[3] Average of the computed value added ratios for the five industries, using census value of shipments as weights. This system of weights adjusts for the disproportionate representation of individual industries in the sample.

How accurately can the census value added by manufacture for these food industries be estimated? The answers we obtained for 1954 and 1958 were within 5 percent of the census figures. The answer for 1963, based on preliminary data only, was within 10 percent. The estimating procedure is shown in table 4. For example, the 1954 business receipts for the five-industry sector were reported in the Source Book as $29,129 million. From our sample we determined

that value added was 30.7 percent of business receipts in 1954 (column 4, table 3). The product of the two statistics ($8,943 million) was an expansion of the value added (by companies classified in the five-industry group) according to a particular concept. To convert this figure as nearly as we could to the Census of Manufactures definition, we applied the ratio 0.816 (from column 6, table 3). This yielded an estimate of census value added of $7,297 million.

The next step was to identify the proper value added statistic from the census. Starting in 1954, the Census of Manufactures covered fluid milk establishments, thus bringing the scope of the census classification into line with the Source Book classification. Because this inclusion has

Table 4.--Derivation of census value added by manufacture, using sample data, with comparisons, for five major food manufacturing industries

Item	1947	1954	1958	1963
I. Estimate of census corporate establishment data using sample data:				
1. Business receipts (from Source Book) (mil. dol.)	24,459	29,129	39,823	[1] 44,970
2. Value added/business receipts (computed from sample) (percent)	25.0	30.7	(30.7)	(30.7)
3. Estimated value added (item 2 x item 1) (mil. dol.)	6,115	8,943	12,226	[1] 13,800
4. Ratio of census value added/value of shipments to sample value added/business receipts	.838	.816	(.816)	(.816)
5. Estimate of census value added by manufacture (mil. dol.)	5,124	7,297	9,976	[1] 11,260
II. Census establishment data:				
6. Value added by manufacture, total corporate and noncorporate establishments:				
Excluding fluid milk establishments (mil. dol.)	[2] 5,368	[2] 7,384	9,761	[1] 11,735
Including fluid milk establishments (mil. dol.)	n.a.	[2] 8,701	11,752	[1] 13,951
7. Share of value added by corporate establishments:				
Food and kindred products total (percent)	89.2	89.1	91.4	n.a.
Five-industry subset (percent)	[3] 85.9	[3] 85.8	88.0	(88.0)
8. Value added by manufacture, corporate establishments:				
Excluding fluid milk establishments (mil. dol.)	4,611	6,335	8,590	[1] 10,327
Including fluid milk establishments (mil. dol.)	n.a.	7,465	10,342	[1] 12,277
III. Comparison of sample and census data:				
9. Item 5 ÷ item 8:				
Excluding census fluid milk establishments	110.6	115.2	116.1	[1] 109.0
Including census fluid milk establishments	n.a.	97.7	96.5	[1] 91.7

[1] Preliminary.

[2] Includes data for "corn wet milling" industry to make the definition of grain mill products comparable with the definition in 1958 and 1963 censuses, and with Source Book definition.

[3] Estimate using the 1948 ratio of corporate share of value added for the 5-industry sector to the corporate share of value added for total food and kindred products manufacturing.

a notable effect on the total, we show both figures in table 4. The relevant one is $8,701 million. This was reduced to a purely corporate basis to make it comparable with Source Book data. The percentage of value added by corporate establishments in the five-industry sector in 1954 was estimated to be 85.8 (footnote 3, table 4). The 85.8 percent applied to the previous figure gave $7,465 million. This was the most accurate estimate we could make of the census value added in the establishments that most closely correspond to the Source Book industry sector. The estimate based on the sample of corporate tax returns, $7,297 million, was 97.7 percent of the census figure of $7,465 million.

The 1958 and 1963 comparisons were made in the same way. We assumed in each case that the 1954 relation between the ratios would have held constant. This assumption was made for exploratory purposes. It seems most reasonable for recent years. To get more accurate ratios, one would need to extend the coverage of the sample to the later years.

FOOD WHOLESALING

To compute value added from food wholesaler tax returns, we must also estimate what our 1954 sample data would have shown for 1963 to make a valid comparison with the 1963 census figure.[6]

[6] Here the sample and the census data were adjusted for the value of inventory changes during the year.

The sample data are shown in table 5. In total, the value added was 12.8 percent of business receipts in 1954 and 12.9 percent in 1948. Because our wholesaler sample unduly favored large companies, the ratios for the three size groups in the sample were weighted by the proportion of business receipts in each, as revealed by the Source Book.[7] This adjustment lowered the 1954 figure from 12.8 to 11.8 percent in table 6.

With the latter figure, the 1963 statistic was estimated by applying the percentage change from 1954 to 1963 in the Census of Business (11) "operating expenses to sales" ratio (table 6). The resulting figure was 11.4 percent, compared with 10.9--the 1963 census ratio of value added to receipts.

The census ratio would, of course, tend to be smaller than the ratio based on tax data because the census definition always excludes the value of supplies, containers, and so on. Hence, a comparison between the former ratio and the census figure on the gross margin would be more consistent. The gross margin was available for the first time for 1963, and unlike value added it included supplies, containers, and so on.

The derived ratio of 11.4 and the census gross margin of 11.7 are indeed close. Yet, further study would have to be given to this matter, because the USDA sample seems particularly thin in view of the heterogeneity of activities

[7] Such business receipts were 22, 30, and 48 percent, respectively, of the three size groups, from low to high, in table 5 (13).

Table 5.--Value added by food wholesaling for sample of corporate returns, by total and selected size groups, 1948 and 1954

Asset size group	Number of firms		Sales		Value added as percentage of business receipts	
	1948	1954	1948	1954	1948	1954
	No.	*No.*	*Mil. dol.*	*Mil. dol.*	*Pct.*	*Pct.*
Under 250.....	23	18	17.4	13.2	10.9	11.4
250 under 1,200.....	9	7	46.1	23.3	10.8	10.3
1,200 and over.....	9	10	280.9	309.9	13.4	13.0
Total all groups....	41	35	344.4	346.4	12.9	12.8

Table 6.--Measures of output of merchant wholesalers of food products, sample and census data, 1948-63

Year	Sample: value added ÷ business receipts		Census data		
	Unadjusted	Adjusted	Gross margins[1]	Value added ÷ operating receipts[1]	Operating expenses ÷ sales[2]
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*
1948.....	[3] 12.9	--	n.a.	n.a.	10.1
1954.....	[3] 12.8	[4] 11.8	n.a.	n.a.	9.8
1958.....	[5] 12.3	[4 5] 11.3	n.a.	n.a.	9.4
1963.....	[5] 12.4	[4 5] 11.4	11.7	10.9	9.5

[1] From U.S. Bureau of the Census (12).
[2] From Census of Business, Wholesale Trade, 1963 and 1954 (11).
[3] From table 5.
[4] Adjusted for undue representation of large companies (see text).
[5] Estimated from the corresponding figure for 1954 based on the percentage change from 1954 in the ratio of operating expenses to sales shown in the last column.

that fall under the heading of groceries and related products wholesalers. The census throws some new light on the problem. Underlying the 11.7 percent for the sector is a range of margin figures from 8.0 (for general-line grocers) to 17.5 percent (for fresh fruit and vegetable wholesalers).

A comparison can be made with Barger's estimates. The 1947 margin figures he gave for grocery and meat products wholesalers were 11 and 13 percent, respectively (1, p. 84). Our 1948 estimates for the three asset size groups ranged from 10.8 to 13.4 percent (table 5). The average margin was 12.9. If the sample were adjusted for undue representation of the large wholesalers, the average would be 12.1 percent. While differences in years and differences in kinds of business in each study would throw some doubt on any result that might have been obtained in this comparison, these similarities in figures are encouraging.

We next estimated the 1963 census value added by merchant food wholesalers. The procedure was described in connection with manufacturing, and is shown in table 7. The results overshot the mark by a wide amount. Our estimate was $3,000 million; the figure that we imputed to the corporate sector of the census total was $1,995 million.

This comparison may be affected by at least two significant sources of error. One is our probable understatement of the true share contributed by corporate establishments in 1963 to census "value added" by merchant food wholesalers. We estimated this share by applying the 1954 share that we could estimate from 1954 data on operating expenses. It seems reasonable to suppose that over the recent decade, the relative importance of corporations in food wholesaling has increased. But we must await additional evidence before concluding that this has occurred.

The second source of error is more troublesome. The classification of business receipts and sales differs under the Source Book and census reporting systems. Business receipts for the groceries and related products industry were 15 percent higher than the census sales for the corresponding classification in both 1958 and 1963. This difference existed in both corporate and sole proprietorship subsectors (table 8). The difference may reflect the

Table 7.--Derivation of "value added" by corporate food wholesaling merchants, with comparison of sample and census data, 1954, 1958, and 1963

Item	1954	1958	1963
I. Estimate using sample data:			
1. Business receipts (Source Book).....Mil. dol. ..	16,065	20,787	[1] 27,524
2. Value added/business receipts (table 6).....Pct. ..	11.8	11.3	11.4
3. Estimated value added (item 2 x item 1)..Mil. dol. ..	--	--	[1] 3,138
4. Ratio of census value added/operating receipts to sample value added/business receipts.....Ratio ..	n.a.	n.a.	[2] .956
5. Estimate of census value added.....Mil. dol. ..	--	--	[1] 3,000
II. Census data:			
6. Value added, total.....Mil. dol. ..	--	--	[3] 3,347
7. Estimated share of value added by corporate establishments.....	[4] .596	n.a.	(.596)
8. Value added by corporate establishments (item 6 x item 7).....Mil. dol. ..	--	--	1,995
III. Comparison of sample and census data:			
9. Item 5 ÷ item 8).....	--	--	[1] 150

[1] Preliminary.
[2] Based on figures in table 6.
[3] From U.S. Bureau of the Census (12).
[4] Estimate based on share of operating expenses incurred by corporate groceries and related products establishments.

Table 8.--Groceries and related products: Business receipts (or sales) classified by legal form of business, IRS and census, 1958 and 1963

Legal form of business	1958	1963	Legal form of business	1958	1963
	Mil. dol.	*Mil. dol.*		*Mil. dol.*	*Mil. dol.*
Tax returns, total.....	28,987	[1] 35,628	Census establishments, total.....	25,201	30,855
Corporations.....	20,787	[1] 27,524			
Partnerships.....	3,338	3,255	Corporations.....	[2] 18,461	--
Sole proprietorships.....	4,862	4,849	Partnerships.....	3,588	--
			Sole proprietorships...	3,152	--

[1] Preliminary.
[2] Includes data for cooperatively owned establishments which generally are organized as corporations; also includes a negligible amount of "other" business forms.

Source: Statistics of Income, U.S. Business Statistics and Corporation Tax Returns. Census of Wholesaling, U.S. Summary.

unavoidable inclusion in company tax returns of receipts from activities that lie outside merchant food wholesaling. And it could reflect other factors.[8]

FOOD RETAILING

Based on the sample of food retailers, the value added per dollar of sales was 17.9 percent in 1948 and 18.9 percent in 1954 (table 9). When the sample was adjusted for undue influence of different asset size groups, the corresponding figures were 18.3 and 18.8 percent, respectively.[9] There are no similar census data with which to compare these findings.

For 1947, Barger estimated food store gross margins to be 17.5, 18.0, and 20.3 percent for grocery chains, independent groceries, and meat stores, respectively (1, p. 81). Although the chains would come closest to representing the corporate population, the population would also include the independents who were incorporated. On the other hand, the tax return figures probably include the value added in central warehouses and tend to bias them upward. Therefore, the 18.3 percent estimate should be shaded downward and compared with 17.5 which should be shaded upward. Yet, while they are reasonably close, differences in years (1948 versus 1947) and differences in the character of the two samples may have made these comparisons somewhat coincidental. Any conclusions based on this comparison are quite provisional.

Table 9.--Sales and value added by food retailing, sample of tax returns, by total and selected size groups, 1948 and 1954

Asset size groups	Number of firms		Sales		Value added as percentage of sales	
	1948	1954	1948	1954	1948	1954
	No.	*No.*	*Mil. dol.*	*Mil. dol.*	*Pct.*	*Pct.*
Under 250.....	8	7	7.5	9.4	18.7	20.2
250 under 1,000.....	7	9	25.7	30.7	17.9	19.2
1,000 under 2,200.....	8	7	75.4	58.0	16.8	16.9
2,200 under 5,000.....	5	6	95.8	144.3	18.0	19.4
5,000 and over.....	4	8	1,183.4	1,952.5	17.9	18.6
Total, all groups...	32	37	1,387.8	2,194.9	17.9	18.6

Further Observations

For a total of the five major food manufacturing industries (3-digit SIC level), we estimated census value added for the census-equivalent sector fairly well, despite the fact that tax returns did not permit accurate measurement of census value added. But for merchant food wholesaling, our estimates of the figure for the census-equivalent sector was wide of the mark despite use of a more accurate measure. The first finding evidently is due (a) to fairly stable relations between the tax and census ratios of value added to sales, and (b) either to a close comparability between activities covered by census establishment data and corporate tax data for the five-industry sector, or to random factors that result in this "as if" condition. The finding for wholesaling brings into question the comparability of activities that are classified as food wholesaling under two different systems of reporting.

Some insight into industry comparability is given by the Census Bureau's pioneering link

[8] For an informative discussion of the difference encountered see U.S. Bur. Census (10, pp. 14-15).

[9] The individual margin figures in columns 5 and 6 (table 9) weighted by the share of business receipts of corporate food retailer returns that each asset size group exhibited in 1948 and 1954, as revealed by the Source Book.

study of the 1958 data (10). While tax and census data derive from different systems of reporting, the link study data show that, in general, the various food industries have fairly high, though nonuniform, industry specialization ratios. The ratio reflects the percentage of a corporation's total employment that is accounted for by its establishments that census classified in the same SIC industry in which the Source Book classified the corporation. It is about as close as one can come, with present data, to determining the degree of industry homogeneity reflected by Source Book data. Differences among industries in the relative contributions of labor (of different skills) and capital to output would, of course, affect the accuracy of this measure.

For food, this specialization ratio ranged from 99.8 percent for soft drinks, carbonated waters, flavoring extracts, and syrups, to 84.8 percent for grain mill products and cereal preparations. In general, ratios for food and kindred products manufacturing industries, food wholesaling, and food retailing were over the 90-percent level (table 10).

These findings suggest that industry classification differences between the Source Book and census data may not be large enough to spoil comparisons for various purposes. Valid linkages and interpolations might be made between a wide array of economic and financial data for different food industries. For example, in the present study our sample limitations, and not classification difficulties, prevent good

Table 10.--Link of census establishment and IRS corporation data: Industry specialization ratios and percentage of business receipts covered by such ratios, food industries, 1958

Industry	Industry specialization ratio of matched corporations[1]	Business receipts of matched corporation as a percent of all corporations[1]
	Percent	*Percent*
Meat products	91.4	96
Dairy products	92.3	89
Canning, preserving, and freezing fruit, vegetables, and seafoods	93.9	87
Grain mill products and cereal preparations	84.8	90
Bakery products	96.0	88
Sugar (cane and beet)	98.2	92
Confectionery and related products	93.5	88
Vegetables and animal oils and fats, except fatty acids	85.9	97
Other food preparations and kindred products	85.6	99
Soft drinks, carbonated waters, flavoring extracts, and syrups	99.8	92
Malt liquors and malt	97.3	90
Wines, brandy, and distilled spirits	95.0-99.9	73
Distilled, rectified, and blended liquors	81.8	94
Groceries and related products (except meat and meat products) wholesalers	96.4	85
Meat and meat product wholesalers	--	92
Food stores	92.7	86
Eating and drinking places	98.8	84

[1] Percentage of "matched" corporation's total employment that is accounted for by its establishments that Census had classified in the same industry in which the corporation was classified by the Source Book. "Matched" companies include both explicitly matched corporations and single-industry corporations that were implicitly matched. (See 10, pp. 15-27.)

Source: (10, tables 5 and 6).

estimates of census value added at the 3-digit level for four of the five food manufacturing industries in the sample. A more representative sample by industry might provide useful results.

The second general matter of concern here is the definition and measurement of value added. As stated earlier, we have used this term in two different senses. In the generic sense, it denotes the value of output of a firm unduplicated by the value of output of some other group of firms. The other meaning is specific. As used in connection with census data, it denotes the precise degree of unduplication in the Census of Manufactures historic series.

It is important to keep this distinction in mind. When Professor Barger used the term "value added" in his study of distribution, he did not mean what the Census of Manufactures means by value added. Barger's specific use, as pointed out before, did not net out the cost of purchased containers, supplies, energy and contract work, whereas the census measure does. While we have freely used the term value added in this paper, we hope that its meaning has been evident from the discussion.

The census study, "Measures of Value Produced In and By Merchant Wholesaling Firms, 1963" (12), neatly lays out the issue of definition and measurement. It gives four measurements of "value produced," each representing a different degree of netness. Thus, gross margin is the value of sales net of the cost of goods purchased; value added is the gross margin net of the cost of containers, other supplies and materials, fuel, electrical energy, water purchased, and contract work on the firm's materials; net income produced (at market prices) is the value added less the cost of services supplied by other businesses and uncompensated bad debts; and net income produced (at factor costs) is net income produced at market prices less depreciation, sales taxes, excise taxes, license fees, and taxes other than income taxes. (The latter measure of value produced includes payroll, employer contributions to FICA, unemployment insurance, interest payments, and profits before income taxes.)

For merchant food wholesalers as a group, gross margins were 7.3 percent higher than value added in 1963. (In turn, value added was 38 and 51 percent higher than net income produced at market prices and at factor costs, respectively.) For general-line grocers this figure was 3.9 percent. While a comparable statistic is not available for food manufacturing, the difference between gross margin and value added would be wider because processing requires more containers, supplies, and electrical energy than food distributing.

The ratio of value added (generic sense) to business receipts computed from tax returns comes closer to the concept of a gross margin than to the census value added ratio. For food wholesalers, our estimate of 11.4 percent lies between the census 11.7 percent gross margin and 10.9 percent that value added is of operating receipts. An improved sample would be needed to pursue this matter. Also, for food retailing our estimate of the value added ratio probably is nearer to a gross margin than to a value added ratio. Evidence from Barger's margin studies indicates this, but better evidence would be needed to give assurance.

Beyond matters of company classification and the definition of value added is the matter of the use of terms by different taxpayers. We assumed that the responses from different food industry firms as to business receipts and costs of merchandise purchased for manufacture or sale were not so heterogeneous as to preclude valid comparisons. The validity of this assumption could be tested with an improved sample. Tax records might yield good estimates of value added by sectors where such basic data are deficient--food retail stores, restaurants, and (on a historical basis) food wholesaling.

Literature Cited

(1) Barger, H. Distribution's place in the American economy since 1869. Nat. Bur. Econ. Res., Inc., Princeton Univ. Press, 1955.

(2) Hoos, S. Relation between agricultural price policy and marketing research. Jour. Farm Econ., Vol. 33, pp. 357-369, August 1951.

(3) Kuznets, S. Commodity flow and capital formation. Nat. Bur. Econ. Res., Inc. New York, 1938.

(4) Ogren, K. E. The farmers' share, three measurements. Agr. Econ. Res., Vol. VIII, No. 2, pp. 43-50, April 1956.
(5) Ogren, K. E. The marketing bill for agricultural products. Agr. Econ. Res., Vol. VII, No. 4, pp. 101-107, October 1955.
(6) Stigler, G. S. Trends in output and employment. Twenty-fifth Anniversary Ser. 4, Nat. Bur. Econ. Res., Inc., New York, 1947.
(7) Waldorf, W. H. Output of factories processing farm food products in the U.S.--1909-1958. U.S. Dept. Agr., Tech. Bul. 1223, 1960.
(8) Waldorf, W. H. Productivity and food processing cost. Agr. Econ. Res., Vol. XIV, No. 1, pp. 30-34, January 1962.
(9) Waugh, F. V., and K. E. Ogren. An interpretation of changes in agricultural marketing costs. Amer. Econ. Rev., Vol. LI, pp. 213-227, May 1961.
(10) U.S. Bureau of the Census. Enterprise statistics, 1958: Part 3--Link of census establishment and IRS corporation data. Series ES3, No. 3, Dept. Commerce, 1964.
(11) U.S. Bureau of the Census. Census of Business: Summary, 1963, and earlier issues. Dept. Commerce, 1965.
(12) U.S. Bureau of the Census. Measures of value produced in and by merchant wholesaling firms, 1963. Dept. Commerce, 1965.
(13) U.S. Internal Revenue Service. Source Book of the statistics of income. Dept. Commerce, annual issues.

Book Reviews

Modernization and the Structure of Societies: A Setting for International Affairs

By Marion J. Levy, Jr. Princeton University Press, Princeton, N. J. 1966. 855 pages. $22.50 (two volumes).

THE NEW GENERALISTS was the leadoff topic for the 1966 National Conference of the American Society for Public Administration. The new generalist required for public administration, it was said at the ASPA meeting, must be able to use the new specialists and at the same time rise above them. How this goal will be achieved is not made clear. Our complex society spawns new specialists at an ever increasing rate. Government, business, and the universities all help accentuate and respond to this increased demand for specialization. We might expect Academe to be in the forefront of providing the educational experiences needed for this new generalist; but unfortunately Academe with its discipline-orientation has not been very responsive to this need.

The most appealing aspect of Levy's two-volume study is that it is highly oriented to the needs of this new generalist. This makes it more than just an ordinary book exploring a narrow subject of specific interest to a sub-discipline of the social sciences. With great determination, Levy cuts across all of the disciplines of social analysis. He does this in part by presenting hypotheses at the highest possible level of generalization, and using a minimum number of variables to develop these generalizations. For example, the two central problem foci of the book are (1) the problem of modernization of the relatively nonmodernized societies, and (2) the problem of stability of the relatively modernized societies, especially those most highly modernized.

The implications of rapid change and growing interdependency of all affairs of all nations must be recognized by every man in public affairs, whether he be a decision-maker at the highest political level or a social scientist hoping to create knowledge useful for this decision making. Levy successfully incorporated change and interdependency into his framework of analysis.

Essentially, this two-volume book is an essay in hypotheses. In the author's words, "I have tried to present . . . many relevant general propositions . . . and to illustrate them by empirical examples." The emphasis is on hypotheses about facts rather than the collection of data, although Levy does not disparage the collection of facts. His main concern is "that all the hypotheses about the facts . . . meet the first scientific requirements of such statements; namely, that they be 'conceivably falsifiable.'"

This emphasis on the development of scientific hypotheses rather than on facts supporting the hypotheses is, in my opinion, what gives this work its potentially universal application by men in public affairs. Nothing becomes out of date as quickly as facts. There are never enough of the right kind of up-to-date facts. Scientific hypotheses also, of course, become out of date; but disproving hypotheses can add to knowledge. The student or the man in public affairs who seeks specific answers to specific questions is doomed to disappointment in today's fast-changing world.

Professor Levy begins by describing what he does not attempt. What he does attempt is "something highly relevant to the problems of international affairs": (1) To sensitize the reader to the social background for international affairs, (2) to show the interdependencies of societies in matters that are relevant to international affairs, (3) to distinguish different types of societies, (4) to show some of the elements common to all societies, (5) to show some of the main variations among societies, and (6) to show some of the ways in which the main similarities underlie the main variations.

The book is organized into four parts. In Part I, The Structure of Relatively Modernized and Relatively Nonmodernized Societies, Professor Levy introduces his basic tool for comparative analysis of nonmodernized and modernized societies. He defines modernization by focusing on the sources of power and the nature of the tools used by the members of a given society. On this basis, the substitution of inanimate power for animate power is a "universal solvent" applicable and understood by members of all societies. He rejects the more usual distinctions based on types of political systems--industrial versus agricultural, the West versus traditional societies--as being less fruitful for comparative analysis. In Part II, Aspects of Social Structure, five aspects common to all societies and underlying all variations among societies are discussed. In Part III the comparative analyses are directed to organizational contexts of societies. Part IV is a summary of the treatments in the preceding parts with an emphasis on the two problem foci of the book.

The book is not inexpensive; neither is it recommended as bedtime reading. But it does suggest that in our market economy there still exists some correlation between price and value received. My enthusiastic recommendation for this book is more than that of a reviewer reading it with the purpose of dispassionately presenting its virtues and shortcomings. It is based on "sweating through" a seminar in 1963 with the author while the book was in manuscript stage. Further, my recommendation comes from experience in using the points of view and hypotheses developed in this book in several seminars aimed at broadening the perspective of men in public affairs.

Levy is a persistent challenger of the conventional wisdom. For example, he points out that use of the armed forces as an instrument of modernization has generally been overlooked by both students and men in public affairs, which may be one of the "great neglected opportunities of history." Unanimity of agreement on a position by recognized experts is a challenge to Professor Levy. He insists on using precise definitions. He is most skeptical of all-or-nothing distinctions. Government is predominately a politically oriented organization, not a political organization.

The book is so arranged that after reading the introduction, which gives the point of view and basic definitions, the reader can then turn to particular parts and chapters and pursue them independently. Each part or chapter is as self-contained as possible in this kind of work.

Levy makes no pretense of necessarily having the right answers. In fact, I was disappointed to discover that in the published version the "I think" at the end of each chapter in the manuscript was deleted.

For the man about to embark on a foreign assignment, short or long in duration: Give Levy's work top priority for a place in your knapsack. For others: waste no time in getting acquainted with the book; its utility is by no means limited to international affairs.

Kenneth E. Ogren

Foreign Agricultural Trade: Selected Readings

Edited by Robert L. Tontz. Iowa State University Press, Ames. 500 pages. 1966. $7.50.

THIS COLLECTION of 46 writings of prominent authors--all of which were originally published elsewhere in journals or books--will be a valuable reference source for the serious student of foreign agricultural trade.

The book is organized into five major subject-matter areas: Part I treats trade theory and policy; Part II, trade programs, including the Food-for-Peace program; Part III, trade restrictions, both tariff and nontariff; Part IV, trade stabilization, with emphasis on commodity agreements; and Part V, trade expansion, with emphasis on the General Agreement on Tariffs and Trade (GATT).

The book's editor, Dr. Robert L. Tontz, is chief of the Trade Statistics and Analysis Branch, Foreign Development and Trade Division, Economic Research Service, U.S. Department of Agriculture. He has organized these subject-matter areas into five seminar sessions, from which the reader can obtain a healthy diversity

of opinion. The reader can also compare varying points of view of prominent figures in the academic, Government, and international organization fields as they quote and contradict each other.

Perhaps the most timely subject matter is that contained in Part II, dealing with Food-for-Peace. In this, Sherman Johnson indicates that foreign aid, to be most effective, must be carried out over a period of years. He believes that domestic production in foreign countries is not likely to respond fast enough to be effective and commercial imports are limited by the scarcity of foreign exchange. Therefore, food aid has a unique place in an integrated program to accelerate domestic growth. Johnson believes also that the American farmer will ultimately benefit from increased trading resulting from the economfc progress of these countries.

Willard Cochrane asserts that the objectives of P.L. 480 and related programs have been to remove surpluses while doing as much "good" with them as possible. Sherwood Berg states that too often we have looked on the overseas market as a place to export part of our farm problem. He calls for greater public understanding of P.L. 480 as an instrument of foreign economic policy rather than merely as a surplus disposal program.

T. W. Schultz, University of Chicago, concludes that not a few countries presently receiving substantial amounts of P.L. 480 farm products are in danger of impairing their agriculture. On the other hand, S. R. Sen, Planning Commission, India, writes that P.L. 480 supplies have helped to mitigate shortages and stabilize prices, and have been of great help in the economic and social development of India. But Sen also makes a plea for an adequate supply of foreign exchange assistance for a few years to promote a balance in economic development and to expand purchasing power.

Erick Mortensen, Ministry of Agriculture, Denmark, gives a competitor's perspective of U.S. transactions under P.L. 480 as well as subsidized exports of butter and dried milk of various European countries and Canada. He raises questions about the problem of interference by such programs with normal patterns of trade. Mordecai Ezekiel, FAO, argues that "bystander" countries have an interest in the amount of surpluses made available for economic development. Earle S. Hoffman, Bureau of Agricultural Economics, Australia, looks at the problem of preserving commercial marketings in the face of what appear to be permanent surplus disposals.

Deena R. Khatkhate, Reserve Bank of India, believes--contrary to many preceding arguments--that surplus disposal does not impair agriculture in the recipient country but instead serves as a boon to underdeveloped countries by holding down the prices of agricultural commodities, thus facilitating maintenance of a large investment expenditure without inflationary pressures. Malcolm Purvis, Cornell University, likewise refutes claims that P.L. 480 exports have been injurious to U.S. competitors and recipient countries.

The book does not advocate any "pet" viewpoint concerning foreign trade policies. Its main contribution is as a reference for university classes in the history and economics of international trade in agricultural products. However, the more casual reader will like the capsule summaries at the beginning of each chapter highlighting the relevant points made by each author. The editor provides a brief introduction to each major part, giving its setting in the general outline of the book.

Francis A. Kutish

The Papaloapan Project: Agricultural Development in the Mexican Tropics

By Thomas T. Poleman. Food Research Institute, Stanford University Press, Stanford, Calif. 161 pages. 1964. $4.50.

TO THOSE CONCERNED with the problem of worldwide food deficits, the sparsely inhabited and virtually undeveloped areas of the humid Tropics present hope for large increases in food and fiber production in a short time. If the necessary inputs--capital, research and technical assistance--are made available, these areas, according to development theory, can become outlets for excess population and not only support their increased population but contribute to the food supplies of growing urban areas.

This study is an examination in depth of one such development project. Known popularly as "Mexico's T.V.A.," it is the first major attempt by the Mexican Government in this field. Its 16 years of operation have been marked by some significant successes, notably in the fields of flood prevention, electric power production, and road construction. Attempts to promote agricultural development have been less successful.

A diversity of small-scale agricultural development projects were undertaken in a number of localities within the Papaloapan basin. In providing agricultural credit, for example, something similar to U.S. production credit was organized in one area while a system of highly paternalistic, supervised credit was instituted in another. Many of the projects were short-lived. Among the causes of failure were lack of selectivity in choosing colonists, vacillating financial support by the central Government, and inadequate preparatory research--in both the physical sciences and the social sciences.

The author concludes that despite serious and expensive mistakes, this project is a noteworthy move in the direction of sustained regional growth. For those concerned with initiating economic growth in similar areas of Latin America and Africa, the author provides a list of questions which the development planner should be able to answer in the affirmative before beginning agricultural programs in such areas. He suggests that until such infrastructure as roads, dams, schools, and research are well advanced, investment in complex colonization schemes is very risky.

Jane M. Porter

Poverty in America

Edited by Margaret S. Gordon. Chandler Publishing Company, San Francisco, Calif. 465 pages. 1965. $5.

UNTIL RECENT MONTHS, the War on Poverty perhaps caught the imagination of the country and of policymakers more than any single proposal of New Frontier or Great Society programs. Earlier, there was a sort of effervescent stimulation felt throughout Government and in many universities, looking forward to this war and its policies and programs. There appeared to be a general feeling on the part of the public that this Nation could go far toward wiping out the scourge of poverty. Economists and others documented the relatively small amount of the Nation's resource required to do the job. In other words, except for the skeptics and cynics, nearly everyone was ready to do battle. The collection of papers which comprise this book represent this period of effervescence--early 1965. The volume contains the proceedings of a national conference on poverty held at the University of California, Berkeley, February 26-28, 1965.

To provide an overview, the book is divided into 11 sections. Among these, the more important are the nature of poverty, views on antipoverty programs, income distribution policies, education policies, full employment and labor market policies, income maintenance policies, and a program to combat poverty. The range of subject matter is wide in the 30 papers included. Poverty problems are approached from the viewpoints of the economist, the sociologist, and the "social reformer." Also included are papers from administrators.

As in all books of this kind, quality varies considerably from paper to paper; but as a whole, there is real meat for those who wish to approach the problems of America's poor.

There are specific points a knowledgeable reader can challenge, but on the other hand, there are also challenges to further study. Lampman, Miller, Glazer, Harrington, and Kershaw are only a few among the students of poverty who contributed to the conference and to this volume. There are many others of equal stature who presented various aspects of poverty and relevant program issues.

A highlight of the volume is the last section--A Program to Combat Poverty in America. The two papers here were presented by the Swedish economist, Gunnar Myrdal, and by Fritz Machlup, the current president of the American Economic Association. Myrdal presents a grand sweep of policy needs, indicating that the United States is not doing nearly enough to solve the

problem; yet he thinks that we can and will face the issues in time. In his evaluation, a very important factor in effectively combating poverty will be the attitude and role of big business. One can question his conclusion, but he marshals evidence for the viewpoint that business is abandoning its myths about economic growth and the role of Government in associated policies.

Machlup presents a useful classification of proposed measures against poverty: Direct assistance, indirect assistance through subsidies or protection, abolition of discriminatory employment, abolition of restrictive laws which reduce employment opportunities, raising the productivity of low-grade labor, raising the productivity of the future labor force, and increasing aggregate demand. He outlines specific measures under each of these and suggests that indirect measures, such as farm income supports, other supports, and subsidies, are extremely poor means of reaching poverty groups. He appeals for a judicious benefit cost analysis and abandonment of measures that do not meet the test.

One will search in vain for much reference to rural poverty, although there is one paper which is highly critical of rural development policies and their effectiveness in reaching the poor. This volume is recommended to any who wish to gain more knowledge about poverty problems, and particularly to those dealing with policy measures and issues.

John H. Southern

Farm Real Estate Values in the United States by Counties, 1850-1959

Edited by Thomas J. Pressly and William H. Scofield. University of Washington Press, Seattle, 1965. 69 pages. $5.

PRESSLY AND SCOFIELD have, in this volume, reported on an exhaustive search of the Census records pertaining to farm values on a per acre basis. The authors have summarized published Census figures for values subsequent to 1900. The statistics prior to and including 1900 are published for the first time in this report. The authors accompany the data with a narrative account of early data collection, weaknesses of the data, and the effects of disturbances, such as the extension and abandonment of land.

This report should prove to be a valuable data source for economic research, historical appraisals, and other time series studies in the related social sciences.

Leland D. Lambert

Selected Recent Research Publications in Agricultural Economics Issued by the U.S. Department of Agriculture and Cooperatively by the State Universities and Colleges[1]

Anthony, Willis E. STRUCTURAL CHANGES IN THE FEDERALLY INSPECTED LIVESTOCK SLAUGHTER INDUSTRY, 1950-62. U.S. Dept. Agr., Econ. Res. Serv., Agr. Econ. Rpt. 83, 70 pp., revised February 1966.

The major share of U.S. commercial livestock slaughter is done by federally inspected (FI) firms. Total commercial slaughter of all livestock species except calves increased substantially between 1950 and 1962, and FI slaughter grew at an even faster rate. Slaughter of most species increased most rapidly in the South Atlantic, Southeast, and Mountain regions.

Bertrand, Alvin L., and Calvin L. Beale. THE FRENCH AND NON-FRENCH IN RURAL LOUISIANA: A STUDY OF THE RELEVANCE OF ETHNIC FACTORS TO RURAL DEVELOPMENT. La. State Univ. Agr. Expt. Sta., Bul. 606, 43 pp., December 1965. (Econ. Res. Serv. cooperating.)

Although many of the French in rural Louisiana have been assimilated into the American community, major differences in their resources and attitudes still exist. In view of the increased involvement of the area in economic development and in Federal programs, and the heightened mobility of the population, however, it is doubtful that French can survive as a living language in rural Louisiana.

Brown, Sidney E., and Eugene C. Pape. INFLUENCE OF PACKAGING AND LABELING ON SALES OF INTERIOR FLORIDA GRAPEFRUIT: A SALES TEST. U.S. Dept. Agr., Econ. Res. Serv., ERS-282, 8 pp., April 1966.

A sales test in 1965 showed that Marsh seedless grapefruit from the interior producing region of Florida are purchased in larger volume when packaged than when displayed loose. Four display techniques were rotated in 16 test stores. The sales response for packaged fruit was the same whether the polyethylene bag was plain or imprinted with a brand label.

Cathcart, William E., and James R. Donald. ANALYSIS OF FACTORS AFFECTING U.S. COTTON EXPORTS. U.S. Dept. Agr., Agr. Econ. Rpt. 90, 63 pp., May 1966.

During 1955-64, U.S. exports of cotton averaged 5.2 million bales--37 percent of domestic production during that period. World production and consumption of cotton trended upward during the period. World cotton exports ranged from a low of 8.6 million bales in 1947-48 to a record 17.9 million in 1963-64. The U.S. share of world exports has trended downward for many years. During 1961-64 it averaged about 28 percent.

Consejo de Bienestar Rural. LONG TERM FORECASTS OF THE SUPPLY AND DEMAND OF AGRICULTURAL AND LIVESTOCK PRODUCTS IN VENEZUELA. Caracas, Venezuela, 302 pp., November 1965. (Under contract for Econ. Res. Serv.)

Establishes rational forecasts of import demand in Venezuela for 1965, 1970, and 1975, with relation to 19 important consumer products in the country. Subsidiary objectives are to project population, gross territorial product, and national income; domestic demand for the 19 products in relation to population increases; and domestic supply in relation to historical trends.

Faber, Fred L. PRESENT AND ALTERNATIVE METHODS OF PRICING EGGS. U.S. Dept. Agr., Econ. Res. Serv., ERS-275, 27 pp., February 1966.

Structural changes in egg markets have created a need for ways to improve the present egg pricing method--base pricing--and for alternatives to it. The present system can be improved by broadening the trade base, lengthening the trading period, and offering free inspection service. Alternatives to the current system include decentralized pricing, committee pricing, and Government administration of pricing.

Gilliam, Henry C., Jr. FARM ADJUSTMENTS FOR CHANGING CONDITIONS: II. TOBACCO FARMS, SOUTH CAROLINA. S.C. Agr. Expt. Sta., Clemson Univ., Clemson, S.C., Bul. 519, 81 pp., December 1965. (Econ. Res. Serv. cooperating.)

Flue-cured tobacco is a major source of farm income in South Carolina. In 1963, tobacco contributed more to the cash receipts of South Carolina's farmers than any other commodity, accounting for 34.2 percent of receipts from crops and 23.4 percent of the total cash receipts from farming, including Government payments.

Goodsell, Wylie D., and Isabel Jenkins. COSTS AND RETURNS ON COMMERCIAL FARMS, LONG-TERM STUDY, 1954-63. U.S. Dept. Agr., Statis. Bul. 368, 110 pp., March 1966.

Estimates costs and returns and related data for 42 important types and sizes of U.S. commercial farms

[1] State publications may be obtained from the issuing agencies of the respective States.

in 24 major farming areas for 1954-63. Commercial farms were defined as farm units with gross sales exceeding $2,499; or units with gross sales between $50 and $2,500, provided the operator was under 65 and worked off the farm less than 100 days of the year.

Goolsby, O. Halbert. AGRICULTURAL EXPORTS FROM TEMPERATE AND TROPICAL ZONES--CHANGES IN PRICES AND FOREIGN EXCHANGE EARNINGS, 1947-63. U.S. Dept. Agr., Foreign Agr. Econ. Rpt. 29, 24 pp., March 1966.

From 1947 to 1963, prices of farm products in the Tropical Zone decreased more and varied more than prices of Temperate Zone products. Prices in both zones were particularly unstable in 1947-54. By 1954, Tropical Zone products were over 40 percent higher than in 1947, and Temperate Zone prices were at their lowest levels since 1947. Price reductions in 1954-63 were greatest for coffee, cocoa, tea, and rubber. Export earnings for these commodities increased throughout 1947-63.

Hanson, Ivan. EVALUATING ENABLING LAWS FOR SPECIAL DISTRICTS: A CASE STUDY IN OKLAHOMA. U.S. Dept. Agr., Econ. Res. Serv., ERS-281, 37 pp., May 1966.

An outline was developed for evaluating State enabling laws for natural resource special districts with regard to democratic processes, legal powers, intergovernmental planning and cooperation, project feasibility analysis, flexibility, and reviewing agencies. The outline was applied to Oklahoma enabling laws for creating such districts as soil and water conservation, conservancy, and others. In its present form, the outline is useful for generalized review of enabling legislation by administrators and legislators.

Hutton, Robert F. A SIMULATION TECHNIQUE FOR MAKING MANAGEMENT DECISIONS IN DAIRY FARMING: NARRATIVE, FLOW CHART, AND COMPUTER CODE DESCRIPTION. U.S. Dept. Agr., Agr. Econ. Rpt. 87, 143 pp., February 1966.

Describes a simulation model of a dairy herd, with the immediate focus on selection of a policy for making herd replacements. The description includes flow chart and computer source language representations of the model. The simulation can be used to develop information on two basic policies for making herd replacements: (1) to purchase all replacements, and (2) to raise all replacements.

Lasley, Floyd A. COORDINATING FLUID MILK SUPPLIES IN THE PITTSBURGH MARKET. U.S. Dept. Agr., Mktg. Res. Rpt. 746, 52 pp., March 1966.

More centralized coordination of the fluid milk supply and fewer reserve stocks would increase efficiency and lower costs of the Pittsburgh milk market. The volume of weekly milk receipts from producers at 7 plants fluctuated 21 percent less when the 7 plants were combined than when they were considered individually.

Moe, Lyle E. GHANA: SUPPLY AND DEMAND PROJECTIONS FOR FARM PRODUCTS TO 1975 WITH IMPLICATIONS FOR US. EXPORTS. U.S. Dept. Agr., Foreign Agr. Econ. Rpt. 30, 20 pp., March 1966.

This report contains projections to 1975 of Ghana's imports of five agricultural products--rice, wheat, dairy products, unmanufactured tobacco, and livestock. In 1963 these five imports totaled $20.0 million, and accounted for 91 percent of total U.S. exports to Ghana.

Podany, Joseph C., Raymond O. P. Farrish, and Robert W. Bohall. CITRUS PRICES AND MARKET STRUCTURE IN THE LOWER RIO GRANDE VALLEY OF TEXAS. U.S. Dept. Agr., Mktg. Res. Rpt. 748, 32 pp., April 1966.

Analyzes the market structure and prices of the Lower Rio Grande Valley citrus industry. The report was based on data from 14 shipping firms and on information from the Texas Valley Citrus Committee. Prices to citrus growers in the 1960-61 marketing year related reasonably to shippers' prices for citrus fruit in the Lower Rio Grande Valley, despite much advance contracting of crops.

Santmyer, Carolee. LIBYA'S AGRICULTURAL ECONOMY IN BRIEF. U.S. Dept. Agr., Econ. Res. Serv., ERS-Foreign 147, 8 pp., March 1966.

Technological improvements offer the best hope for expansion of Libya's agricultural output. Ninety-five percent of the country is presently classified as desert, with just over 2 percent regarded as agricultural land. Of this 2 percent, about 5.9 million acres are arable, 0.3 million are under permanent crops, and 2.8 million are in permanent meadows and pastures. An additional 2 percent has some agricultural potential.

Sitler, Harry G. CROP ENTERPRISE COSTS FOR SOUTHEASTERN COLORADO. Colo. State Univ., Cooperative Ext. Serv., Fort Collins, Colo., 16 pp., February 1966. (Econ. Res. Serv. cooperating.)

Tables in this report show estimated costs and returns per acre of dryland crops in southeastern Colorado in 1965. The cost information is summarized for growing crops on hard and sandy land, and for rotations of wheat, grain sorghum, barley, forage sorghum, and broomcorn. The tables should provide a base for more accurately determining the most profitable crop rotation.

Skold, Melvin D., and Earl O. Heady. REGIONAL LOCATION OF PRODUCTION OF MAJOR FIELD CROPS AT ALTERNATIVE DEMAND AND PRICE LEVELS, 1975: A LINEAR PROGRAMING ANALYSIS. U.S. Dept. Agr., Tech. Bul. 1354, 63 pp., April 1966.

The objective of the analysis is to determine the location, in 1975, of production of wheat, corn, oats, barley, grain sorghum, soybeans, and cotton that would maximize profits to farmers under specified assumptions. The analysis covers 144 crop production regions in the United States. Solutions that would bring the highest net returns to farmers are computed at 10 different price levels. The profit-maximizing cropping pattern derived in the analysis concentrates production in known areas of specialization.

Smith, Helen V. TRANSPORTATION OF GRAIN IN THE SOUTHWESTERN STATES BY RAIL AND TRUCK, 1960-62. U.S. Dept. Agr., Statis. Bul. 367, 26 pp., February 1966.

Contains data on total volume of grain receipts and shipments in five Southwestern States: Arizona, Colorado, New Mexico, Oklahoma, and Texas. The information was obtained from grain handlers in all active country elevators, feed mills, flour mills, and terminal and subterminal elevators.

Tegeler, Henrietta Holm. THE AGRICULTURE OF WEST ASIA. U.S. Dept. Agr., Econ. Res. Serv., ERS-Foreign 143, 76 pp., February 1966.

A high proportion of West Asia's arable land lies fallow each year because of water shortage and inadequate land management. The arable area could be increased by more than 60 percent, although such an increase would involve expensive reclamation of 86 million acres. Long-range programs to increase output should improve the agricultural economy of West Asia, but the region will not likely produce vast farm surpluses in the near future.

Tegeler, Henrietta Holm. JORDAN'S AGRICULTURAL ECONOMY IN BRIEF. U.S. Dept. Agr., Econ. Res. Serv., ERS-Foreign 146, 8 pp., February 1966.

Although agriculture employs four-fifths of Jordan's population, it contributes only one-third of the national income. Agricultural output is considerably below requirements for domestic consumption, primarily as a result of inadequate rainfall. Through its Development Board, the Government of Jordan has outlined a long-range plan for economic development during 1963-70; achievement of its goals, however, depends largely on foreign assistance.

U.S. Department of Agriculture. THE AFRICA AND WEST ASIA AGRICULTURAL SITUATION: REVIEW OF 1965 AND OUTLOOK FOR 1966. Econ. Res. Serv., ERS-Foreign 153, 98 pp., April 1966.

West Asia's total farm production in 1965 exceeded the high level reached in the preceding season by a little more than 2 percent. Northern Africa's total agricultural output for 1965 increased about 5 percent over the record harvest of 1964. Total farm production in Africa south of the Sahara was virtually unchanged in 1965 from 1964, a more favorable year than usual.

U.S. Department of Agriculture. COSTS OF STORING AND HANDLING GRAIN IN COMMERCIAL ELEVATORS, 1964-65. Econ. Res. Serv., ERS-288, 32 pp., April 1966.

Results of this report were based on accounting records of 252 elevators selected to represent the principal storage areas, types, and kinds of construction. The sample included 165 country elevators, 58 inland terminal elevators, and 29 port facilities.

U.S. Department of Agriculture. THE FAR EAST, MAINLAND CHINA, OCEANIA AGRICULTURAL SITUATION: REVIEW OF 1965 AND OUTLOOK FOR 1966. Econ. Res. Serv., ERS-Foreign 152, 76 pp., March 1966.

Total agricultural production in the Far East in 1965 was practically unchanged from the 1964 level, despite widespread drought in India. Per capita production declined, however, because of the continued population growth rate. Mainland China's production only equaled or slightly exceeded 1964 levels. Production in Australia was adversely affected by drought, while production in New Zealand generally improved.

U.S. Department of Agriculture. INDICES OF AGRICULTURAL PRODUCTION FOR THE 20 LATIN AMERICAN COUNTRIES (PLUS COUNTRY TABLES FOR JAMAICA AND TRINIDAD AND TOBAGO). Revised 1954 through 1964, Preliminary 1965. Econ. Res. Serv., ERS-Foreign 44, 26 pp., revised January 1966.

Contains base period aggregates and indices of total agricultural production in Latin America for 1954-64 and preliminary 1965; base period population and indices of per capita agricultural, crop, and food production; and production statistics for each Latin American country, by selected agricultural commodities.

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U.S. Department of Agriculture. THE WORLD AGRICULTURAL SITUATION, REVIEW OF 1965 AND OUTLOOK FOR 1966. Foreign Agr. Econ. Rpt. 28, 46 pp., January 1966.

Total world production of agricultural products rose about 1 1/2 percent in 1965 from 1964, but the gain was smaller than in each of the previous 2 years. While production in the Western Hemisphere and Western Europe outstripped population gains, the reverse was true in most of the rest of the world. The report presents the world agricultural situation in general as well as by commodities and by regions.

U.S. Department of Agriculture. THE U.S.S.R. AND EASTERN EUROPE AGRICULTURAL SITUATION: REVIEW OF 1965 AND OUTLOOK FOR 1966. Econ. Res. Serv., ERS-Foreign 151, 62 pp., March 1966.

Analyzes farm production and resources, agricultural policies, and trade in the U.S.S.R. and Eastern Europe for 1965. Total farm production in the region dropped 4.5 percent from the peak 1964 level primarily because of reduced output in the U.S.S.R. In 1965 agricultural output in the U.S.S.R. decreased 7 percent, and the country again had to buy wheat from the West. Feed grain shortages in several other East European countries resulted in increased grain imports from the West.

U.S. Department of Agriculture. THE WESTERN HEMISPHERE AGRICULTURAL SITUATION: REVIEW OF 1965 AND OUTLOOK FOR 1966. Econ. Res. Serv., ERS-Foreign 154, 70 pp., March 1966.

Agricultural output in the Western Hemisphere in 1965 recovered from the reduced level of 1964. Output records were set in Canada, the United States, and Latin America. Increased production will assure domestic needs and increased export supplies.

U.S. Department of Labor. FARMWORKERS: A REPRINT FROM THE 1966 MANPOWER REPORT. Manpower Admin., 28 pp., 1966. (Econ. Res. Serv. cooperating.)

Recent Government manpower programs reflect the need for a more rationalized approach to the development and use of human resources and to the changing manpower requirements of both agricultural and nonagricultural industries. This report considers the transformation of agricultural manpower requirements and its effects on farm population and work force and on rural and urban communities. It discusses the Government programs which are helping to cushion the adjustments of the people and areas affected, with emphasis on the new manpower programs initiated during the 1960's.

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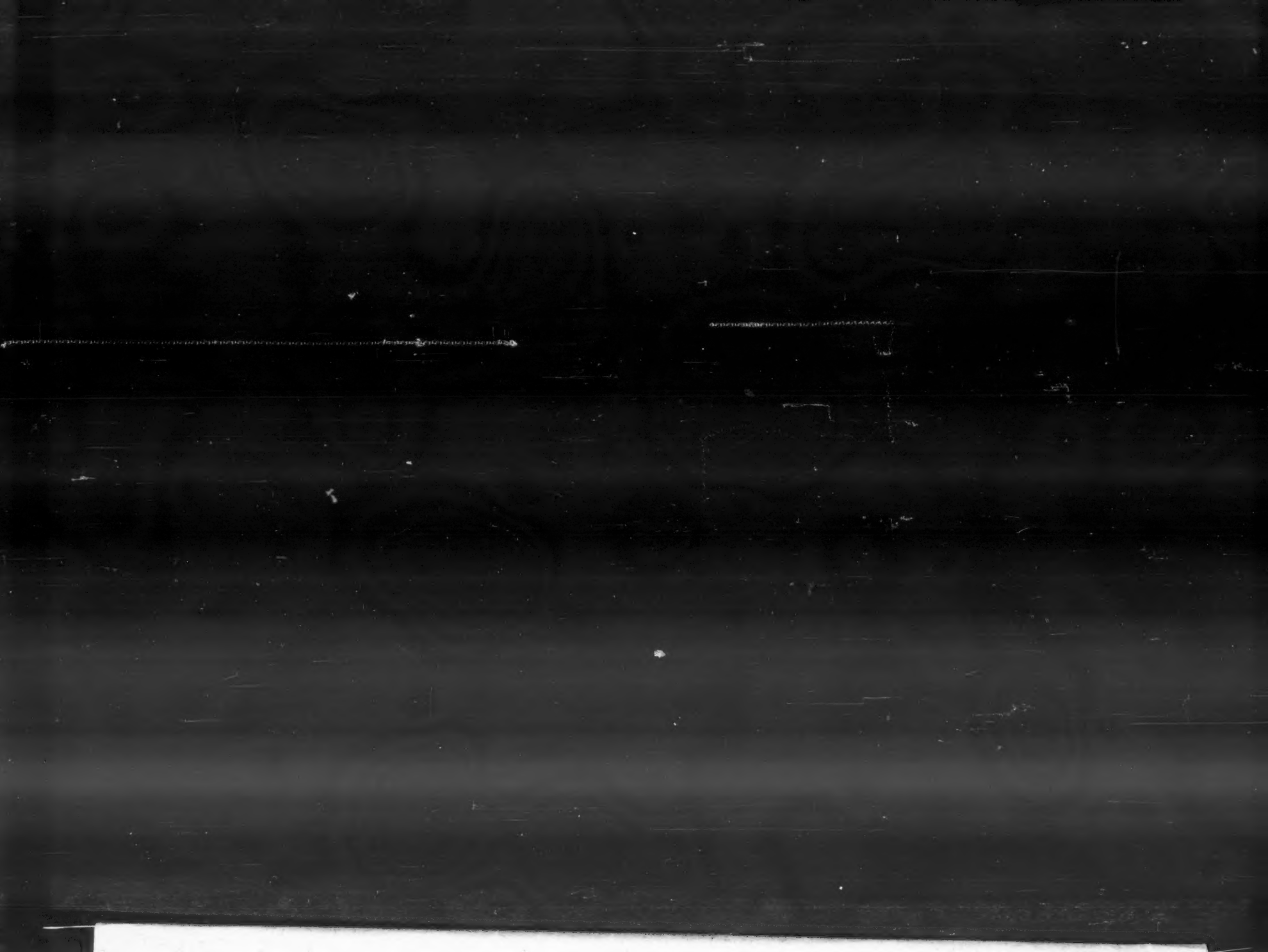
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